



ARA ISLAS ORCADAS

ARA ISLAS ORCADAS CRUISE 1176 SEDIMENT DESCRIPTIONS*

***WITH AN APPENDIX OF ADDITIONAL
CORE DESCRIPTIONS FOR CRUISE 0775**

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COVER: The waning moments of sunset in the Southern Ocean as seen from aboard ARA ISLAS ORCADAS, cruise 1678. (From a color slide taken by Paul F. Ciesielski.)

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INTRODUCTION

The purpose of this volume, the eighth in a series of similar publications (Goodell, 1964, 1965, 1968; Frakes 1971, 1973; Cassidy *et al.*, 1977a, 1977b), is to continue a presentation to the research community of sediment core descriptions and attendant data of cored and otherwise obtained sediments retrieved in waters of the Southern Ocean aboard the research vessel, ARA ISLAS ORCADAS (formerly, USNS ELTANIN), as a part of the circumpolar survey begun by ELTANIN in 1962 (see issue of Antarctic Journal of the United States, Vol. 8, No. 3, 1973).

The data presented herein are concerned with the results of coring activities aboard cruise 1176 of ISLAS ORCADAS, the second marine geology coring cruise of this vessel under the terms of the present United States-Argentine agreement, and have been organized in format similar to that of the previous volume of core descriptions (Cassidy *et al.*, 1977b). These data include 1) a brief summary of the coring objectives of the cruise, together with a discussion of core recovery; 2) a table and map of station location data for materials retrieved; 3) a table of tentative age-dates for each piston core; 4) an explanation of the laboratory procedures and descriptive criteria used in the description of the sediments, and 5) lithologic descriptions of the piston and trigger cores, and the piston and trigger core bag samples.

By way of expanding the usefulness of the core descriptions, several additional features have been incorporated within this volume. These are:

1. The description and age-dating of core cutter and/or catcher sediments from piston cores;
2. The weights of these bagged sediment samples;
3. An indication on the lithologic log (appearing in the DEFORMATION column) of the positions of the "breaks", or joints, between piston core sections. Because separation of the cores into sections for shipment results in minor disturbance of the sediment at the section ends, this information may be of interest to the potential investigator with precise sampling requirements; and
4. Minor revisions to the descriptive criteria used in the classification of the sediments, as presented in the previous volume (Cassidy *et al.*, 1977b).

Future volumes of core descriptions will be presented along the lines of those presented here, with further revision, perhaps, as might be necessitated by the recovery of heretofore unencountered lithologies, or by unique circumstances. The next volume of core descriptions to appear in this series will be that for ISLAS ORCADAS cruise 1277. Two additional volumes are scheduled for cruises 1578 and 1678.

ACKNOWLEDGMENTS

Gratefully acknowledged is the assistance and genuine interest of each member of the core describing team (the "core crew") whose work efforts made this project possible. This elite team consisted of Margaret Eggers, Shelton Graves, John Hattner, Steve Jones, Duncan MacKenzie, Susan Shepley, and Ivar Zemmels. Their names are listed in alphabetical order, for all contributed equally, both in the performance of routine duties and specialized techniques. It is not possible to adequately document the extent of involvement of each person, most of whom are veterans of one or more ELTANIN or ISLAS ORCADAS cruises. The limited, but effective presence of Jan Smolko during the later phases of core-describing does not go unheeded.

Occasional assistance in core describing, proofreading, and other duties was provided by Marty Abrahams, Jay Muza, and F. Tieng Tjong.

Paul Ciesielski provided the determinations of age-dates for the piston cores, assisted in preparation of the statements of bottom topography, and contributed many helpful suggestions throughout the course of the work. It should be mentioned that the coring operation aboard this cruise was supervised by Ciesielski and John Hattner, whose shipboard participation was

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Carbonate analyses were performed by Yang Ja Chung and Bruce Wagner. Drafting duties were handled by Rosemarie Raymond, and typing was the responsibility of LaVerne Lamb. Alan Brown attended to the photographic work.

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ISLAS ORCADAS CRUISE 1176

Cruise Objectives

Cruise 1176 of the Argentine research vessel, ARA ISLAS ORCADAS, was the second in a series of multidisciplinary cruises (marine geology, geophysics, and physical oceanography) of this vessel in waters of the Southern Ocean. For the first time, cores were retrieved in survey areas uncharted by USNS ELTANIN, thus extending the circumpolar survey originally begun by ELTANIN in 1962 - a significant accomplishment.

A detailed summary of the cruise is documented in Sclater et al. (1977). Excerpted from this article are the following statements concerning objectives of the marine geology coring program:

"Coring: The coring program had three objectives: (1) to explore for and sample older (pre-Pliocene) sediments along the northeast flank of the Maurice Ewing Bank (eastern Falkland Plateau) and on the Northeast Georgia Rise in order to elucidate the geologic history of these features, (2) to extend the circumpolar bottom sediment survey into the southeast Atlantic sector of the southern ocean, and (3) to obtain closely spaced cores on a north-south transect beneath the polar front in order to study the late Neogene history of this important oceanographic feature. Core stations beneath the polar front were taken in conjunction with physical oceanographic stations to provide optimum integration of modern sediment and hydrologic data.

Of six cores taken on the Maurice Ewing Bank, four penetrated to older sediments ranging from Eocene to Miocene in age. This suite of cores complements a series of 22 cores taken on ISLAS ORCADAS cruise 7 and adds important new information concerning the depositional and erosional history of the Falkland Plateau. Nine cores across the northeast Georgia Rise recovered Plio-Pleistocene sediment, but did not penetrate into older units which seismic profile records show exposed just beneath the relative thin mantle of glacial marine sediments and oozes.

Thirteen cores were taken at hydrographic stations or during geophysical surveying in the Malvinas Outer Basin, the South Sandwich Island Arc, and along the easterly track from the South Sandwich Trench to 8°W longitude. The final 21 cores were taken at 30' to 45' intervals along a north-northeast track from 58° to 45°S., which passed across the African-Antarctic midocean ridge and the polar front at 50°-49°S. Examination of core top samples indicates that existing sediment facies maps for the area need revision. Basaltic ocean crust was apparently sampled by one and possibly two of the cores taken adjacent to the ridge axis. Although core density along the transect was limited by bad weather and mechanical problems, the transect provides the most detailed sampling yet available for study of the sedimentological facies of the region, their relationship to bottom topography and, through time, the paleoposition of the polar front."

There were no bottom photographs taken on the cruise.

Core Recovery

A total of 45 complete piston cores were recovered aboard ARA ISLAS ORCADAS cruise 1176 by means of a modified Ewing piston corer using plastic liners. ("Complete" is defined herein to mean that a sample removed from these cores can be assigned an absolute interval value with respect to its distance down-core from the top, or 0 cm, end of the core.) The descriptions of 41 of these cores are presented within this volume. (Four cores, 1176-65, 69, 90, and 91 were retained by the Republic of Argentina.) Also recovered were 4 "bag" samples, representing unsuccessful piston-core attempts which, nevertheless, did manage to obtain sediments lodged in the core cutter and/or catcher. In effect, these represent surface sediments; descriptions of them are included in the interest of publicizing their availability to the research community.

Similarly, a total of 19 complete trigger cores were recovered aboard ARA ISLAS ORCADAS cruise 1176. Descriptions of these sediments, together with those of 2 "bag" samples, are according to the same criteria used for the description of the piston cores, and all latitudes, longitudes, and water depths given are the same as for the corresponding piston core data.

Descriptions of the trigger cores and trigger core bag samples follow those of the piston cores. Descriptions of the piston core bag samples follow those of the trigger cores.

Table 1 (page 5) lists ship station numbers, which correspond to piston and trigger core numbers, and latitude, longitude, length and water depth of cores. With respect to these data, it should be noted that assignments for latitude, longitude and water depth are not based on position data from PDR (Precision Depth Recorder) "hit" times of the coring apparatus, but instead, on the position of the vessel at the time of the beginning of descent of the coring apparatus (as determined from the computer output of the ship's Daily Data Sheets). This is done under the assumption that the initial descent of the coring rig was probably more directly over the point of bottom contact of the corer than would be the ship at "hit" time. During the descent, the ship may drift considerably; however, rapid "paying out" of the cable during drift time allows for a more or less vertical descent of the coring apparatus beneath the original ship position, with the trajectory of the cable being that of a long, sweeping arc from ship to point of bottom contact. Therefore, the fathometer reading at "hit" time indicates water depth under the ship, and not necessarily at the coring point. Water depths were interpolated from points in the ship's Daily Data Sheets, assuming constant slope from one known point to another, and the depth in fathoms was converted to meters by a 1.8288 conversion factor.

It is to be further noted that water depths for ship stations are "corrected" in the sense that they have been interpolated with respect to ship position at the time of initial descent of the coring apparatus, as explained above; they have not been corrected, however, with respect to the Matthews corrections tables (Matthews; 1939), and therefore are not, in a strict sense, true corrections.

Core Shipment and Handling

All cores retrieved aboard ARA ISLAS ORCADAS cruise 1176 were shipped by non-refrigerated ocean freight and truck transport to the FSU Facility. Upon arrival, the cores were stored in the Facility's refrigerated storage room, maintained at 2°C. Core splitting of the plastic-encased, 3-meter sections of cored sediment is accomplished using an adjustable, track-operated, overhead, radial power saw (Cassidy and DeVore, 1973). The sediment core is manually split after the saw cuts through only the thickness of the cellulose acetate butyrate (CAB) plastic liner, on opposite sides. Following description and sampling, the two half-sections of core are heat-sealed in polyethylene "sleeving" to prevent dessication and then returned to refrigerated storage.

TABLE 1

STATION LOCATIONS, CORRESPONDING WATER DEPTHS, AND CORE
RECOVERY FOR ARA ISLAS ORCADAS CRUISE 1176

Core and Ship Station Number ¹	Latitude(S)	Longitude	Water Depth(m)	Core Length(cm):	
				PC	TC
8	49°53.1'	42°22.3' (W)	1929	BAG	NR
9	50°09.7'	42°17.2' (W)	1441	146	NR
10	50°05.7'	41°06.5' (W)	1635	333	6
11	50°06.0'	40°50.1' (W)	1865	BAG	NR
12	50°04.1'	40°38.8' (W)	2088	160	NR
13	50°04.2'	40°30.2' (W)	2209	128	NR
15	50°46.1'	37°09.2' (W)	4876	646	46
16	50°53.8'	33°57.6' (W)	2880	140	NR
17	51°26.7'	33°09.7' (W)	2041	BAG	NR
18	51°26.7'	33°17.5' (W)	1929	BAG	NR
19	51°29.0'	33°21.7' (W)	1767	465	38
20	51°28.2'	33°44.3' (W)	2081	490	NR
21	51°26.8'	33°51.9' (W)	2281	590	NR
22	51°25.9'	33°59.4' (W)	2542	256	NR
24	51°47.2'	33°39.3' (W)	1970	546	NR
25	52°12.4'	32°38.0' (W)	2418	176	NR
32	56°24.3'	28°08.2' (W)	2474	36	NR
34	56°28.5'	21°58.8' (W)	4486	1052	20
36	56°22.7'	16°59.7' (W)	4175	1110	18
38	56°15.8'	12°49.1' (W)	4587	1200	NR
39	56°12.8'	10°08.4' (W)	4128	1178	NR
41	56°04.9'	06°15.0' (W)	3773	966	58
52	53°42.7'	10°24.0' (E)	3815	969	NR
53	52°12.7'	09°28.3' (E)	3116	991	NR
54	53°07.1'	07°59.2' (E)	2502	440	NR
55	53°22.9'	06°39.6' (E)	2926	1181	NR
64	57°13.8'	08°12.1' (E)	5479	1756	NR
65 ₂	57°12.5'	08°12.4' (E)	5483	1800*	55
66	57°55.3'	08°59.0' (E)	4513	1161	51
67	57°02.6'	09°14.9' (E)	5274	1773	39
68	56°11.2'	09°35.3' (E)	4830	1767	53
69 ₂	55°07.1'	09°56.9' (E)	4552	1090*	59
70	55°09.0'	09°58.0' (E)	4521	1691	NR
71	54°31.2'	10°17.9' (E)	3809	1455	48
73	53°31.2'	10°49.1' (E)	3167	629	31
74	53°06.7'	11°12.8' (E)	3561	174	NR
76	52°31.6'	11°34.3' (E)	3127	365	20
78	51°45.5'	12°03.1' (E)	3974	1172	BAG
79	51°11.0'	12°26.4' (E)	3727	1100	NR
81	50°09.2'	12°54.6' (E)	4265	1150	NR
82	49°31.2'	13°11.5' (E)	4100	1169	NR
83	48°59.1'	13°26.4' (E)	4634	1710	NR
85	48°20.9'	13°45.7' (E)	4499	1743	29
86	48°02.6'	13°49.0' (E)	4338	1721	49
87	47°29.5'	14°04.0' (E)	4843	1472	BAG
88	46°57.8'	14°18.2' (E)	5106	1012	24
89	46°10.4'	14°39.9' (E)	4374	1760	28
90 ₂	45°34.6'	14°52.1' (E)	4587	1342*	NR
91 ₂	44°56.7'	15°02.9' (E)	4649	1757*	30

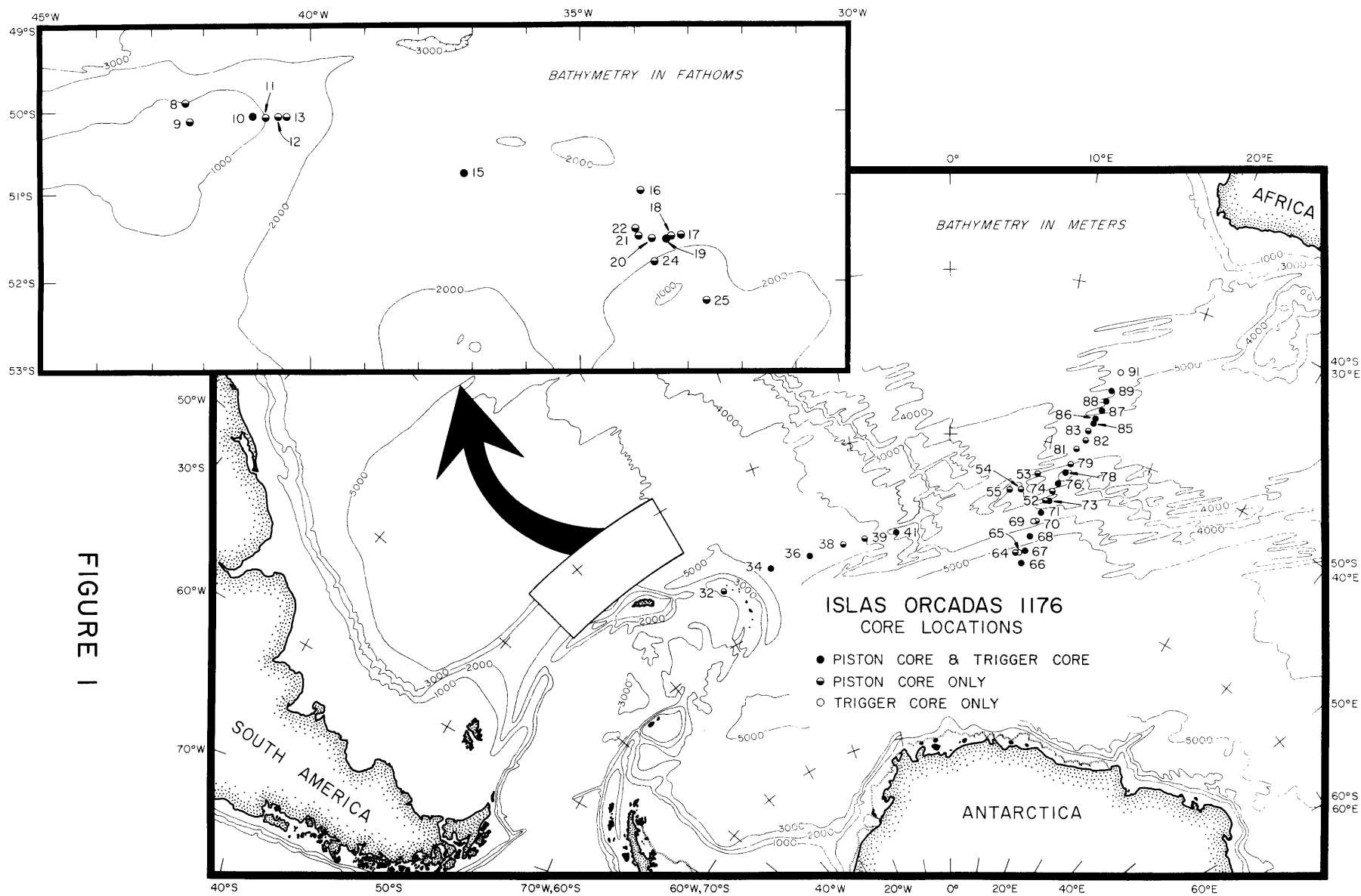
¹Omitted station numbers are for stations at which there was no core recovery, or were CTD/STD stations only (Sclater *et al.*, 1977).

²Piston cores 65, 69, 90 and 91 retained by Argentina.

*Undescribed core length.

NR = No Recovery BAG = Bag Sample (see text, page 3)

Table 1 is intended to be used together with the core location map for this cruise (page 6), the core descriptions, and the notes concerning piston and trigger core recovery aboard cruise 1176. This approach will insure a knowledgeable evaluation of the data presented herein for the purpose of submitting sample requests.



SEDIMENT CORE DESCRIPTIONS

The form and style of the core descriptions in this volume are similar to the descriptions of cores from cruise 0775 of ARA ISLAS ORCADAS (Cassidy *et al.*, 1977b). This style is to be maintained because the users have responded favorably to the format of the descriptions, which have provided a detailed and standardized guide to the sedimentological characteristics of the cores. In this chapter the method and the classification system used in describing the cores are explained in detail. Much of the basic information has been presented in an earlier volume (Cassidy *et al.*, 1977b).

Included in the descriptions are the smear slide descriptions of the fine-grained sediments, and results of carbonate analysis of calcareous sediments and those containing sufficient carbonate. Accompanying each core description is a graphic log illustrating the sediment lithology, inclusions, major sediment structures, degree of disturbance, and "breaks" between core sections. Other information given for each core includes the station location, water depth, and the sea-bottom topography at the coring site. Descriptions of trigger cores are presented without graphic log.

Lithologic units were defined on the basis of compositional, textural and other sedimentological characteristics. Contacts between units are not always sharp and do not necessarily coincide with color changes. To determine a gradational boundary between two units, systematic tests were conducted. The examinations included the following:

1. Acid tests for calcareous sediments;
2. Studies of smear slides obtained from close intervals;
3. Studies of coarse fractions (greater than 62.5 μm , separated by wet sieving) under binocular microscopes;
4. Thorough megascopic examination of the core to determine changes in sedimentary structures, presence or absence of certain dispersed components such as volcanic ash or micro-manganese nodules (tested with hydroxylamine hydrochloride), etc.

For each unit, the following information was recorded: the intervals (in centimeters), sediment name, color and color code, inclusions (gravel, sedimentary clasts, manganese nodules, volcanoclastics and other rock fragments), sedimentary structures (lamination, bioturbation, sedimentary casts and mottling), and the nature of contacts between units.

Sediments were classified according to the sediment classification system which is based on sediment composition and texture, as explained later in this chapter. In order to reduce bias and for the purpose of uniformity, only the semi-quantitative data (abundance estimates) for each sedimentary unit were used for classifying the sediment. Thus, only data obtained through megascopic and microscopic studies were used in this procedure, while carbonate titration values were not.

A good representative sample occasionally encompasses a wide range of particle size; hence, it is necessary to have two microscopes with different powers. Coarse-grained particles were studied under binocular microscopes and smear slides of fine-grained particles were examined under powerful petrographic microscopes. The smear slides were prepared using Canada balsam as the mounting medium. Smear slides of sediments lacking in coarse-grained particles usually constitute representative samples of the unit. Occasionally, a smear slide may be biased toward the finer fractions (clay, diatoms or nanofossils), and this was usually detected during re-examination of the core. In the event of such bias, the smear slide data were used only as a guide in naming the sediment.

The Geological Society of America color chart was used to define the sediment color and color code. Color was determined immediately following the splitting of the core in order to minimize fading and color changes due to exposure of the sediment to the atmosphere. Different colors in a unit as a result of different environments of deposition (chemical or biological) were also recorded.

Inclusions greater than 2 mm were carefully examined; if necessary, they were cleaned and examined under binocular microscopes and then were replaced at their original position. Inclusions can be classified into three groups:

1. Manganese nodules;
2. Gravel and rock fragments, predominantly of igneous or metamorphic origin and most likely glacially deposited;
3. Sedimentary clasts.

The latter are softer, rounded to angular, unconsolidated fragments of reworked sediments. The term "balls" was used for well rounded clasts, commonly composed of mud (mud or clay balls), but sometimes composed of diatomaceous ooze. In a few cases the reworked sediments were redeposited in casts.

The degree of disturbance was qualitatively determined based on the value of the sediment for sampling. The term "slightly disturbed" refers to partial disturbance commonly found along the sediment and core liner interface. "Washed" sediments are those which have lost some or most of their finer constituents or are mixed due to the agitation of water trapped within the liner. "Washed" or "slightly disturbed" sediments have to be sampled carefully in order to obtain samples that have stratigraphic significance. "Very disturbed" sediments are those which have lost their primary sedimentary structures and stratigraphic integrity. This type of disturbance generally occurs locally within the core, caused by various mishaps during the coring operation, such as core liner implosions, difficult extrusion of the core liner, etc. "Flow-in" refers to sediment that has randomly entered the core by suction during the coring operation such that the stratigraphic value of the sediment is lost. This is usually characterized by vertical striations which can be traced from the base of the core. The length of the "flow-in" section, measured up the core, varies from a few centimeters to several meters, depending on various technical settings (length of the scope line, length of the coring pipe) and sedimentary conditions (depth of water, nature of sediment).

Carbonate Analysis

A modified version of the EDTA titration method outlined by Turekian (1956) was used to determine the carbonate content of calcareous sediments. Samples to be analyzed were chosen based on the results of smear slide analysis, and most carbonate samples were taken at the same core interval as the smear slide sample. Only those with total carbonate greater than 3% in the smear slide were analyzed by this method.

Samples to be analyzed were brought into solution by dissolving them in acetic acid (1:50), then buffering the solution with NH_4Cl to pH 10, and complexing the heavy metals in the solution with 2% KCN. The solution was titrated with EDTA for alkaline earth, using Eriochrome Black T as an indicator. In this method, all carbonate is assumed to be associated with the acid-soluble alkaline earth elements. To determine the precision of the analysis, samples were analyzed in duplicate or triplicate and a final computation showed that the average relative precision for all samples is $\pm 3\%$.

Smear Slide Analysis

The abundance of various components of sediment on smear slides was estimated under petrographic microscopes capable of magnification up to 2000X and with options of using transmitted (plane) light, polarized light, phase contrast, and Nomarski differential interference contrast. For each smear slide, the following constituents were quantitatively estimated:

1. Minerals: quartz, feldspar, mica, heavy minerals, volcanic glass, palagonite, glauconite, pyrite, micro-Mn nodules, and zeolite;
2. Biogenic Constituents: foraminifera, calcareous nannofossils, unspecified carbonate, diatoms, radiolarians, sponge spicules, and silicoflagellates.

Quartz and feldspar were not differentiated for practical reasons.* For the same reason, palagonite and volcanic glass were grouped together. Keratophytic particles generally can be distinguished, but due to their mode of formation and sometimes slightly weak birefringence they were grouped into volcanic glass. Included in micro-Mn nodules were ferrous oxides and manganese oxides which occurred as staining material on biogenic particles. Minute micro-Mn nodules sometimes are difficult to differentiate from dark volcanic glass. A chemical test with hydroxylamine hydrochloride ($\text{NH}_2\text{OH}\cdot\text{HCl}$) was always conducted to differentiate ferrous/manganese oxides and volcanic glass. Carbonate fragments which can be positively identified as pieces of broken foraminifera tests were considered as foraminifera instead of unspecified carbonate.** Clay minerals, which have refractive indices very close to that of Canada balsam, were detected and estimated under phase contrast objectives.

The percentage composition chart for rock and sediments as prepared by Shvetsov (Terry and Chilingar, 1955) was used to estimate the abundance of the constituents of the sediments on the smear slides. Care was taken to account for void space in all estimates. An abundance ratio of the two most abundant components on a smear slide (e.g. diatoms and clay) are commonly determined before estimating the percentages of these components.

In order to get a reliable estimate and to reduce the individual bias, more than 98% of the slides were analyzed two or three times by different observers. Besides obtaining the values for statistics, this double or triple analysis also reduced the probability of misidentification of highly colored and opaque particles. From sets of values of compositional percentages, the error due to observers was computed. The average absolute error for components often found on the smear slides are as follows:

Quartz and Feldspar	$\pm 1\%$
Heavy minerals	$\pm <1\%$ ($\pm 0.5\%$)
Clay	$\pm 3\%$
Volcanic glass	$\pm 1\%$
Glauconite	$\pm 1\%$
Micro-Mn nodules	$\pm <<1\%$ ($\pm 0.3\%$)
Zeolite	$\pm <1\%$ ($\pm 0.6\%$)
Carbonate unspecified	$\pm 1\%$
Foraminifera	$\pm 1\%$
Calcareous nannos	$\pm 1\%$
Diatoms	$\pm 3\%$
Radiolarians	$\pm <1\%$ ($\pm 0.7\%$)
Sponge spicules	$\pm <<1\%$ ($\pm 0.2\%$)
Silicoflagellates	$\pm <<1\%$ ($\pm 0.2\%$)

Note that the computed average absolute error can be smaller than 1% with a certain numerical value (e.g. 0.2%, 0.6%), but in the smear slide description the abundance estimate of any component can only be stated $<1\%$ or $<<1\%$ without numerical value because a petrographer can only estimate with confidence to 1%. If a component can be found regularly in most traverses on a smear slide, but its abundance is less than 1% according to the percentage composition chart (Terry and Chilingar, 1955), then the abundance of that component is rounded as $<1\%$. If a component is rarely found on a smear slide, it is recorded as $<<1\%$. Also note that the highest average absolute error was found in diatoms

*Published data indicate that the average amount of feldspar in marine sediments is not more than 1%, except in the vicinity of volcanoes. Most feldspar occurs in silt-size fragments, unless in sediments rich in volcanic ash, where feldspar particles up to 0.25 mm have been observed. Microcline and plagioclase are easily distinguished from quartz under cross-polarized light by their twinnings. However orthoclase, the dominant feldspar in sediment, is difficult to distinguish from quartz even by experienced petrographers. Becke-line method is generally used to observe the low refractive index of orthoclase (as compared to Canada balsam or quartz). For qualitative work, in addition to observing the refractive index, other feldspar characteristics such as cleavage, lower birefringence, bubble inclusions, etc. are usually examined. These examinations are not practical for quantitative work such as smear slide analysis in core description. Very little information is lost by combining the estimates of quartz and feldspar because feldspar is commonly present in a very small amount, except in sediment rich in volcanic ash.

**Calcareous biogenic sediments often contain pieces of carbonate minerals which can sometimes be attributed to broken foraminiferal tests (due to reworking of sediments or breakage during smear slide preparation). As long as they can be recognized as foraminifera tests, they are called foraminifera. If the carbonate minerals cannot be related directly to any calcareous fossils, then they are called unspecified carbonate.

and clay because they are the most abundant constituents in the sediment collected by ARA ISLAS ORCADAS cruise 1176.

Apparent discrepancies between smear slide estimates of total carbonate and the titrated values are caused by two major factors: the dimension of measurement and the sample size. The estimates of percentages on smear slides are based on cross-sectional area or volume, whereas titration is based on weight. Sample size used for titration is 100 to 500 times larger than the smear slide sample. Theoretically, the carbonate value of small and large samples from homogeneous sediment should be equal or have a small deviation, but if the samples are from bioturbated or laminated sediment, the probability that the carbonate values will be the same is very small.

Sediment Classification

The sediment classification scheme used in this volume is similar to that used for describing the cores from ARA ISLAS ORCADAS cruise 0775 (Cassidy *et al.*, 1977b). Although this classification is very practical, has been used for the Deep Sea Drilling Project, and is the product of a panel of highly-qualified sedimentologists and marine geologists (JOIDES Advisory Panel on Sedimentary Petrology and Physical Properties), there are those who are not satisfied with it. One of the objectives raised concerned the numerical values used to differentiate various sediment groups (i.e. 30% biogenics, 30% silt and clay, etc.; see Figure 2).

In an attempt to find a new classification, the data from a total of 376 smear slides prepared from 31 cores of cruise 1176 (cores 9, 10, 12, 13, 19, 20, 21, 22, 24, 25, 34, 36, 38, 39, 52, 53, 54, 55, 64, 66, 67, 68, 70, 71, 73, 74, 76, 79, 81, 87, and 88) were analyzed using Q-mode factor analysis. A fortran program QFAC (a modified version of CABFAC, Klován and Imbrie, 1971) was used in this study, and the results show that four varimax rotated factors can be represented by:

1. Diatoms
2. Clay
3. Quartz and Volcanic glass
4. Unspecified carbonate, Foraminifera and Calcareous nannofossils.

Plots of the varimax factor matrix clearly indicate clustering of samples into groups similar to those in the classification used previously (Cassidy *et al.*, 1977b). This exploratory type of factor analysis then confirms that the existing classification and the numerical values used to differentiate sediment groups are natural. The only modification necessary is in the numerical value used as the boundary between muddy diatomaceous ooze and diatomaceous mud. In this volume, transitional biogenic sediments having less than 30% calcareous skeletons (includes unspecified carbonate) will be called muddy diatomaceous ooze if the diatom content is greater than the total silt and clay content, and diatomaceous mud otherwise.

Principles used in this classification are similar to those of the JOIDES classification. Some of the important points are: 1) sediment names are those in common usage; 2) the classification is strictly descriptive and has almost no genetic connotation, and 3) the categories are based only on abundance estimates of the constituents as determined by smear slide examination, wet sieving, or megascopic examination.

The three major categories of sediment are (figure 2):

1. Pelagic sediments consisting of pelagic clay, siliceous ooze, calcareous ooze, and a mixture of siliceous and calcareous ooze,
2. Transitional sediments consisting of mixtures of biogenic and clastic sediments, and
3. Terrigenous and volcanic detrital sediments.

Rules for nomenclature in this classification are similar to the criteria outlined in the previous volume (Cassidy *et al.*, 1977b), but with minor modifications.

- I. General Rules
 - A. Sediments are named after their major constituent.
 - B. Lesser constituents which exceed 15% (except for glauconite which must exceed 10%) are used as qualifiers which precede the sediment name.
 - C. A maximum of two qualifiers may be used, the second being the most abundant.

II. Specific Rules

A. Pelagic Clay

This type of sediment accumulates at a very slow rate and generally has a brown hue. Authigenic components are common (equal to or greater than 5% in estimated abundance) in this sediment; however, they might be distributed in such a manner that they were not found on the smear slide or were present only in a small quantity. Usually, a careful examination of the core, aided by the smear slide analysis, was necessary to determine whether or not a sediment was a pelagic clay. The primary components of pelagic clay are clay minerals and silt size quartz particles, and it may contain less than 30% biogenic components. A qualifier cannot be added to pelagic clay; hence, pelagic clay containing 25% diatoms is not called diatomaceous, pelagic clay.

B. Pelagic Biogenic Sediments

Included in this category are sediments containing at least 30% biogenic skeletons, but containing less than 30% silt and clay. They are named according to their principal fossil types: diatomaceous ooze, radiolarian ooze, siliceous ooze, foraminiferal ooze, nannofossil ooze, or calcareous ooze. A second (lesser) biogenic component may be used as a qualifier if present more than 15%. The following rules are applicable for naming the pelagic biogenic sediments:

1. If both the principal and lesser fossil types are similar in their chemical composition (i.e., calcareous or siliceous), and if the ratio of the lesser to the principal fossil type exceeds 0.75, the sediment is called siliceous ooze or calcareous ooze, depending on its chemical composition.

Examples:

Quartz and Feldspar	10%
Volcanic glass	1%
Glaucinite	7%
Diatoms	45%
Radiolarians	35%
Sponge spicules	2%

$$\frac{\text{Radiolarians}}{\text{Diatoms}} = .78$$

:hence, siliceous ooze

Quartz and Feldspar	5%
Clay	3%
Foraminifera	40%
Calcareous nannos	38%
Diatoms	13%
Radiolarians	1%

$$\frac{\text{Calcareous nannos}}{\text{Foraminifera}} = .95$$

:hence, calcareous ooze

Quartz and Feldspar	10%
Clay	10%
Volcanic glass	2%
Glaucinite	3%
Diatoms	50%
Radiolarians	25%
Silicoflagellates	<1%

$$\frac{\text{Radiolarians}}{\text{Diatoms}} = 0.5$$

:hence, radiolarian, diatomaceous ooze

2. Calcareous sediments which have unspecified carbonate more than one-third of the total carbonate are also called calcareous ooze.
3. If the principle and lesser fossil types differ in chemical composition, and if the ratio of the lesser to the principal fossil type exceeds 0.75, then both components are used in the sediment name joined by a hyphen.

Example:

Quartz and Feldspar	8%
Clay	7%
Volcanic glass	15%

Carbonate unspecified	7%
Foraminifera	30%
Diatoms	28%
Radiolarians	5%

$$\frac{\text{Diatoms}}{\text{Foraminifera}} = .93$$

:hence, diatomaceous-foraminiferal ooze.

C. Transitional Biogenic Sediments

Included in this category are sediments containing at least 30% silt and clay. Two subdivisions are recognized; the transitional siliceous sediments having at least 15% diatoms but less than 30% calcareous skeletons, and transitional calcareous sediments having at least 30% calcareous skeletons. The following rules apply for naming the sediments in this category:

1. A transitional siliceous sediment is called muddy, diatomaceous ooze if diatoms are more than total silt and clay; otherwise, it called diatomaceous mud.
2. Sediments in the transitional calcareous group are called marly, calcareous ooze.
3. The detrital component of a transitional siliceous sediment is specified according to the textural parameters as outlined for terrigenous sediments.

Example:

Quartz and Feldspar	37%	(sand 25%; silt 12%)
Clay	26%	
Volcanic glass	3%	
Glauconite	5%	
Diatoms	23%	
Radiolarians	5%	
Sponge spicules	1%	

:hence, diatomaceous, sandy mud

D. Terrigenous Detrital Sediments

Sediments in this category are classified according to their texture using the size limits defined by Wentworth (1922). Particles greater than 2 mm are called gravel, without differentiating them into granules, pebbles or cobbles, but the size of an individual gravel is stated in the core description. The following rules apply for naming sediments in this category:

1. Sediments lacking in gravel, or containing less than 30% gravel are classified according to the triangular classification as shown in figure 3. The qualifier "gravelly" is applicable if gravel is more than 15%.
2. Sediments containing more than 30% gravel are called gravel with appropriate qualifiers, if applicable. Sediments containing more than 80% gravel have no qualifiers.

E. Volcanic Detrital Sediments

This sediment group is classified according to the textural and compositional classification of Wentworth and Williams (1932).

1. The nomenclature and the size limits used are as follows:

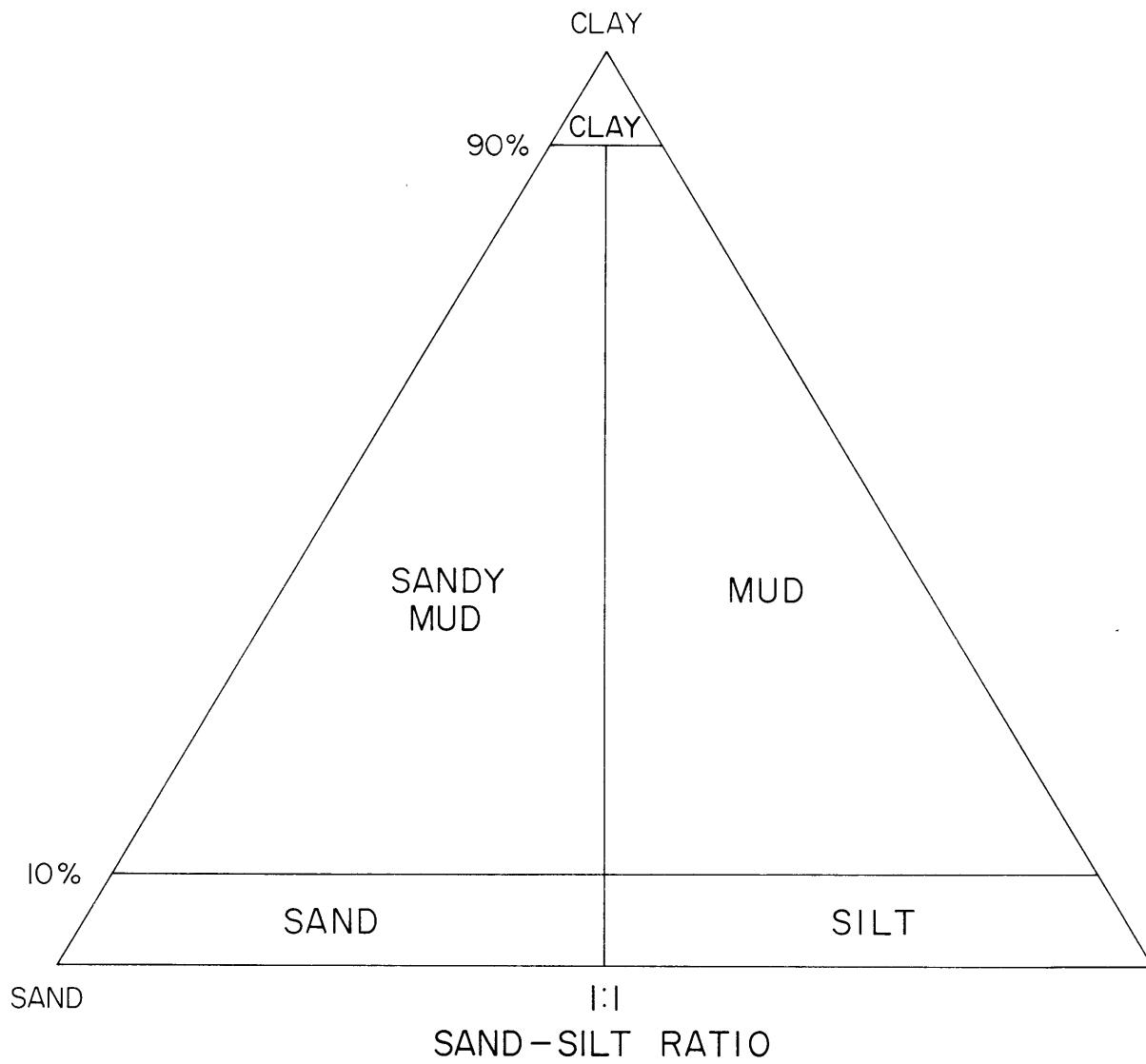
volcanic breccia:	greater than 32 mm
volcanic lapilli:	less than 32 mm, greater than 4 mm
volcanic ash:	less than 4 mm

2. The volcanic detrital sediments can have biogenic qualifiers by adding the term "bearing" to the qualifier; example: diatom-bearing, volcanic ash. The same term is also added if the volcanic detrital is used as a qualifier to another group of sediments; example: ash-bearing, diatomaceous ooze.

CLASSIFICATION OF MARINE SEDIMENTS

PELAGIC	NON-BIOGENIC	<p>Pelagic Clay</p> <p>Authigenic components common (>5%)</p> <p><30% Biogenous</p>	
	BIOGENIC	<p>>30% Biogenous</p> <div> <div> <p>>30% Siliceous skeletons (Biogenic-siliceous)</p> <p>Siliceous ooze Radiolarian ooze Diatomaceous ooze</p> </div> <div> <p>>30% Calcareous skeletons (Biogenic-calcareous)</p> <p>Diatomaceous-nannofossil ooze Foraminiferal-diatomaceous ooze Radiolarian-nannofossil ooze etc.</p> <p>Calcareous ooze Foraminiferal ooze Nannofossil ooze</p> </div> </div> <p><30% Silt and clay</p>	
TRANSITIONAL	BIOGENIC	<p>>30% Silt and clay</p> <div> <div> <p>Radiolarian types uncommon</p> <p>Muddy diatomaceous ooze</p> <p>Diatoms > Silt and Clay Diatoms < Silt and Clay</p> <p>Diatomaceous mud</p> <p>>15% Diatoms</p> </div> <div> <p><30% Calcareous skeletons >30% Calcareous skeletons</p> <p>Marly calcareous ooze</p> <p>>30% Calcareous skeletons</p> </div> </div>	
TERRIGENOUS and VOLCANIC DETRITAL		<p><15% Diatoms or <30% Calcareous skeletons</p> <p>Authigenic components rare</p> <div> <p>Clay Mud Silt Sand Gravel</p> <p>Ash Lapilli Breccia</p> </div>	

FIGURE 2



CLASSIFICATION OF CLASTIC SEDIMENTS

FIGURE 3

BASAL SEDIMENT AGES OF ISLAS ORCADAS CRUISE 1176 PISTON CORES

The following text is from a manuscript submitted for publication to the Antarctic Journal of the United States (Ciesielski, Kaharoeddin and Cassidy, in press), and has been included in this volume by consent of the authors. References cited are to be found in the references section of this volume; italicized statements are those which have been added to the original text.

"Aboard ARA ISLAS ORCADAS cruise 1176, sediment recovery was successful at 49 of the 50 attempted piston coring stations (*Figure 1, this volume*). Presented here are preliminary basal sediment ages for each of these cores (*Table 2, this volume*).

Coring activities on this multidisciplinary cruise (marine geology, geophysics, and physical oceanography), from Buenos Aires to Cape Town, were concentrated on the Malvinas (Falkland) Plateau, the Northeast Georgia Rise, and along a NNE track from 58°S to 45°S. The primary objective of coring on the Malvinas Plateau and Northeast Georgia Rise was to obtain a series of piston cores reflecting a broad vertical distribution of sediment ages within the stratigraphic record in order to further elucidate the complex depositional and erosional history of these features. Coring along the NNE, 58°S to 45°S track was for the purpose of providing additional information on Pliocene-Quaternary sedimentation, particularly fluctuation responses of the sedimentary regime to changes in the paleo-position of the Polar Front. Since most coring stations along this track either included, or were in close proximity to physical oceanographic stations, the investigator is provided with an opportunity to integrate present day hydrographic data with that gleaned from the sedimentary record.

Cores from localities other than those specified above were taken at sites considered important to the extension of knowledge already gained from the efforts of the ELTANIN/ISLAS ORCADAS circumpolar survey. A detailed summary of cruise 1176, and its scientific objectives and accomplishments, appears in Sclater, et al. (1977).

The table (*Table 2, this volume*), lists piston core number, latitude, longitude, water depth, sample interval, sediment lithology, and age of the core sediment at each sampled interval.

Sampling: Forty-five of the forty-nine piston-coring attempts recovered sediment which at least partially filled the core liner. These cores were sampled for purposes of age-dating within 7 centimeters of their base, and in most cases, at their base. Cores with disturbed basal sedimentary sequences were also sampled immediately above (within a few centimeters) the disturbed sequence. Also sampled and dated were core catcher and/or cutter (C/C) sediments, if recovered. It is of interest to note that all sample intervals within a particular core yielded similar age-dates, with the exception of one core, IØ 1176-67.

Sediment recovery limited to either C/C retrieval or but a few centimeters of sediment in the bottom of the core liner (or both) is represented by four cores (IØ 1176-8, -11, -17, and -18); this material is stored as bagged samples. These four cores, in effect, are surface sediments, but were nevertheless sampled for purposes of age-dating. Age dates for four other cores (IØ 1176-65, -69, -90, and -91) are based solely on the analysis of sediment from the core bottoms, as these cores were retained by the Republic of Argentina. No information is available at this time concerning sediment lithologies within these cores, or the degree of disturbance, if any, of the sediment.

Laboratory: Smear-slide preparations from each sample were examined for their calcareous nannofossil, diatom, and silicoflagellate constituents. All samples, which contained little or no carbonate, were age-dated utilizing one or more of the following siliceous microfossil biostratigraphic schemes: the Neogene biostratigraphic zonation of McCollum (1975), as modified by Weaver (1976); the

Paleogene diatom zonation of Gombos (1977), and the silicoflagellate zonation of Ciesielski (1975) and Bukry (1974, 1976).

Investigators making use of the age dates presented in the table are cautioned that these ages are preliminary in nature. Considerable reworking and the extremely poor preservation of the microfossil content of some of the dated sediments render age assignments difficult and tenuous at best. The basal sediment ages are presented as an aid to investigators in the selection of piston cores for sampling. Individuals whose research needs require precise age determinations may wish to obtain additional confirmation of the age dates provided. More detailed age assignments, such as subepoch and/or biostratigraphic zonations of some of the Cruise 1176 cores, are given in Ciesielski and Wise (1977) and Ciesielski (1978). The lithologic character of all cores is described in Kaharoeddin (1978; *this volume*).

Results: The basal sediment ages of the forty-nine piston cores range from late Eocene to Quaternary; sediments from seventeen cores are Pliocene or older. All but three of these pre-Quaternary cores (10 1176-16, -18, and -19) are located on the Maurice Ewing Bank (eastern Malvinas Plateau), in close proximity to the African-Antarctic ridge crest, or south of the ridge crest along the portion of the NNE-trending cruise track from 58°S to 45°S."

Two additional comments are to be noted concerning the table. The numerical values of the sample depths appearing in the sample interval column are actually the lower measurements of one-centimeter-in-length samples removed from the cores, from which a small amount of material was used for the preparation of smear-slides. Therefore, the depth 145 cm should be read as 144-145 cm, 331 cm as 330-331 cm, etc. Also, attention is called to the fact that core number 89, 1760 cm in length, was inadvertently not sampled at its base. The one sample removed from the core (1714-1715 cm) is from the base of the undisturbed portion of the lowest unit, of which the bottom 45 cm (1715-1760 cm) are disturbed (flow-in).

TABLE 2
BASAL SEDIMENT AGES OF PISTON CORES

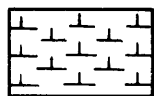
Core Number	Latitude(S)	Longitude	Water Depth(m)	Sample Interval(cm)	Sediment Lithology*	Age
8	49°53.1'	42°22.3'(W)	1929	C/C	glauconitic, foraminiferal, quartz sand	Quaternary
9	50°09.7'	42°17.2'(W)	1441	145;C/C	nannofossil ooze	Middle Miocene
10	50°05.7'	41°06.5'(W)	1635	331;C/C	diatomaceous, nannofossil ooze	Late Miocene
11	50°06.0'	40°50.1'(W)	1865	C/C	muddy sand	Middle Miocene
12	50°04.1'	40°38.8'(W)	2088	160;C/C	radiolarian-diatomaceous mud; diatomaceous mud	Late Eocene
13	50°04.2'	40°30.2'(W)	2209	127;C/C	diatomaceous, sandy mud	Middle Pliocene
15	50°46.1'	37°09.2'(W)	4876	646;C/C	diatomaceous ooze	Quaternary
16	50°53.8'	33°57.6'(W)	2880	138;C/C	diatomaceous, sandy mud	Middle Pliocene
17	51°26.7'	33°09.7'(W)	2041	C/C	glauconitic, sandy, diatomaceous ooze	Quaternary
18	51°26.7'	33°17.5'(W)	1929	C/C	sandy, diatomaceous mud	Late Pliocene
19	51°29.0'	33°21.7'(W)	1767	233;461;C/C	muddy, diatomaceous ooze	Early Pliocene
20	51°28.2'	33°44.3'(W)	2081	488	diatomaceous, sandy mud	Quaternary
21	51°26.8'	33°51.9'(W)	2281	583;C/C	diatomaceous ooze	Quaternary
22	51°25.9'	33°59.4'(W)	2542	160;256	diatomaceous mud; diatomaceous ooze	Quaternary
24	51°47.2'	33°39.3'(W)	1970	395;541	diatomaceous, calcareous ooze	Quaternary
25	52°12.4'	32°38.0'(W)	2418	176;C/C	diatomaceous mud; diatomaceous, sandy mud	Quaternary
32	56°24.3'	28°08.2'(W)	2474	36	diatomaceous, muddy, volcanic ash	Quaternary
34	56°28.5'	21°58.8'(W)	4486	1052;C/C	diatomaceous ooze; ash-bearing, diatomaceous ooze	Quaternary
36	56°22.7'	16°59.7'(W)	4175	1016;1106;C/C	muddy, diatomaceous ooze	Quaternary
38	56°15.8'	12°49.1'(W)	4587	1199;C/C	diatomaceous ooze	Quaternary
39	56°12.8'	10°08.4'(W)	4128	1177;C/C	diatomaceous ooze	Quaternary
41	56°04.9'	06°15.0'(W)	3773	966;C/C	diatomaceous, foraminiferal ooze	Quaternary
52	53°42.7'	10°24.0'(E)	3815	964;C/C	ash-bearing, diatomaceous ooze; muddy, diatomaceous ooze	Quaternary
53	52°12.7'	09°28.3'(E)	3116	950;990;C/C	diatomaceous ooze	Quaternary
54	53°07.1'	07°59.2'(E)	2502	438;C/C	diatomaceous ooze	Quaternary
55	53°22.9'	06°39.6'(E)	2926	1180;C/C	diatomaceous ooze	Quaternary
64	57°13.8'	08°12.1'(E)	5479	1754;C/C	pelagic clay	Late Miocene
65	57°12.5'	08°12.4'(E)	5483	C/C	diatomaceous mud	Quaternary
66	57°55.3'	08°59.0'(E)	4513	1160;C/C	diatomaceous mud	Late Miocene
67	57°02.6'	09°14.9'(E)	5274	1643;1771;C/C	pelagic clay	Middle Pliocene**
68	56°11.2'	09°35.3'(E)	4830	1766;C/C	diatomaceous ooze	Late Pliocene
69	55°07.1'	09°56.9'(E)	4552	C/C	muddy, diatomaceous ooze	Quaternary
70	55°09.0'	09°58.0'(E)	4521	1686;C/C	diatomaceous ooze	Early to Middle Pliocene
71	54°31.2'	10°17.9'(E)	3809	1080;1453;C/C	diatomaceous ooze	Late Miocene
73	53°31.2'	10°49.1'(E)	3167	624;C/C	diatomaceous ooze	Early Pliocene
74	53°06.7'	11°12.8'(E)	3561	171	volcaniclastic	Late Pliocene
76	52°31.6'	11°34.3'(E)	3127	348;363;C/C	muddy, diatomaceous ooze; gravelly, volcanic ash; ash-bearing gravel	Early Pliocene
78	51°45.5'	12°03.1'(E)	3974	1167;C/C	volcanic ash; gravel	Quaternary
79	51°11.0'	12°26.4'(E)	3727	1100;C/C	diatomaceous ooze	Quaternary
81	50°09.2'	12°54.6'(E)	4265	1149	diatomaceous ooze	Quaternary
82	49°31.2'	13°11.5'(E)	4100	1168;C/C	diatomaceous ooze	Quaternary
83	48°59.1'	13°26.4'(E)	4634	1708;C/C	diatomaceous ooze	Quaternary
85	48°20.9'	13°45.7'(E)	4499	1683;1742;C/C	diatomaceous ooze	Quaternary
86	48°02.6'	13°49.0'(E)	4338	1720;C/C	diatomaceous ooze	Quaternary
87	47°29.5'	14°04.0'(E)	4843	1242;1469;C/C	diatomaceous ooze	Quaternary
88	46°57.8'	14°18.2'(E)	5106	1012;C/C	diatomaceous ooze	Quaternary
89	46°10.4'	14°39.9'(E)	4374	1715;C/C	diatomaceous ooze	Quaternary
90	45°34.6'	14°52.1'(E)	4587	1342;C/C	zeolitic clay	Quaternary
91	44°56.7'	15°02.9'(E)	4649	C/C	muddy, diatomaceous ooze	Quaternary

*In cases where sediment lithologies differ at more than one sampling horizon within a core, each is shown.

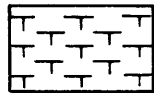
**C/C dated as Early Pliocene(?).

KEY

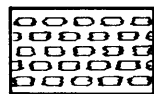
SYMBOLS USED FOR CORE DESCRIPTIONS



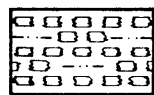
Nannofossil ooze



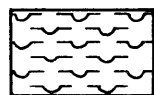
Foraminiferal ooze



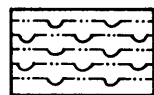
Calcareous ooze



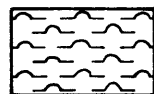
Marly, calcareous ooze



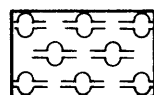
Diatomaceous ooze



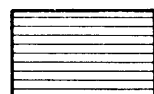
Muddy, diatomaceous ooze



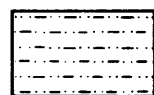
Radiolarian ooze



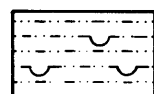
Siliceous ooze



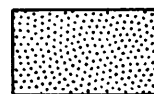
Pelagic clay



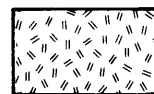
Mud



Diatomaceous mud



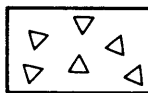
Sand



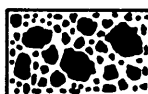
Volcanic ash



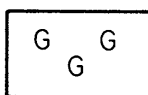
Breccia



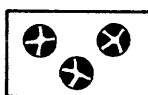
Lapilli, pumice



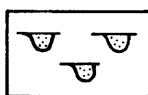
Gravel, rocks, rock fragments



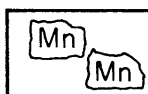
Glauconite



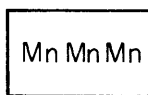
Sedimentary clasts



Sedimentary casts



Manganese nodules



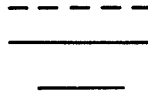
Disseminated manganese oxides



Bioturbation



Mottling



Gradational contact



Sharp contact



Core section "breaks"



Scale change



Slightly disturbed



Very disturbed

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 50°09.7' S		CORR. DEPTH: 1441 M, 788 FM.			
			LONGITUDE: 42°17.2' W		CORE LENGTH: 146 CM			
LITHOLOGIC DESCRIPTION								
			0-16 cm: Sand, moderate olive brown (5Y 4/4); contains volcanic glass, radiolarians, foraminifera and glauconite; scattered gravel (to 1.5 cm); gradational contact.					
			16-33 cm: Sandy, diatomaceous, radiolarian ooze, moderate olive brown (5Y 4/4); scattered gravel (to 0.5 cm); 5 cm gravel at base of unit; sharp contact.					
			<u>smear slide:</u>		<u>24 cm</u>			
50			Quartz and Feldspar	25	Diatoms	20		
			Clay	5	Radiolarians	35		
			Volcanic glass	2	Sponge spicules	2		
			Glauconite	10	Silicoflagellates	1		
			33-69 cm: Muddy, diatomaceous, radiolarian ooze, dusky yellowish green (10GY 3/2); gradational color change at 45 cm to light olive brown (5Y 5/6); bioturbation between 43 and 69 cm; gradational contact.					
			<u>smear slides:</u>		<u>36 cm</u>	<u>58 cm</u>		
100			Quartz and Feldspar	2	10	Diatoms	15	20
			Heavy minerals	<1	<1	Radiolarians	30	45
			Clay	43	5	Sponge spicules	3	10
			Volcanic glass	2	5	Silicoflagellates	3	5
			Glauconite	2	-			
			69-146 cm: Nannofossil ooze, yellowish gray (5Y 8/1); increasing radiolarian content with depth; bioturbation between 69 and 83 cm.					
			<u>smear slides:</u>		<u>97 cm</u>	<u>144 cm</u>		
150			Quartz and Feldspar		1	1		
			Volcanic glass		2	1		
			Foraminifera		5	5		
			Calcareous nannos		70	60		
			Diatoms		10	8		
			Radiolarians		10	20		
			Sponge spicules		1	5		
			Silicoflagellates		1	<1		
			<u>Percent Carbonate</u> (96-98 cm): 67.4 (143-145 cm): 62.4					
			Bottom topography: very gently sloping; northeast apex of Maurice Ewing Bank.					

ISLAS ORCADAS PC 1176-10

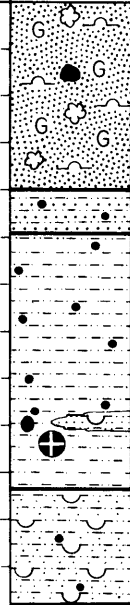
LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 50°05.7' S		CORR. DEPTH: 1635 M, 894 FM.	
			LONGITUDE: 41°06.5' W		CORE LENGTH: 333 CM	
			LITHOLOGIC DESCRIPTION			
			0-20 cm: Foraminiferal, glauconitic sand, medium light gray (N6); contains volcanic glass; 6 cm gravel at 14 to 20 cm; gradational contact.			
			Percent Carbonate (10-12 cm): 12.9			
			20-64 cm: Glauconitic sand, dusky yellow green (5GY 5/2); contains radiolarians; gravel (to 2 cm) scattered throughout unit; gradational contact.			
			64-88 cm: Radiolarian-diatomaceous sand, moderate olive brown (5Y 4/4); gravel (to 1 cm) scattered between 64-75 cm; 6 cm gravel at 67-73 cm; lens of glauconitic sand at 85-87 cm; gradational contact.			
			smear slide: 74 cm			
			Quartz and Feldspar 40			
			Heavy minerals <1			
			Clay 5			
			Volcanic glass 5			
			Glauconite 15			
			Diatoms 20			
			Radiolarians 15			
			Sponge spicules <1			
			Silicoflagellates <1			
			88-117 cm: Muddy, diatomaceous, radiolarian ooze, light olive gray (5Y 5/2); gravel (to 1.5 cm) scattered throughout unit; 6 cm gravel at 113 to 117 cm; sharp contact.			
			smear slide: 103 cm			
			Quartz and Feldspar 15			
			Clay 25			
			Volcanic glass 5			
			Glauconite 3			
			Diatoms 20			
			Radiolarians 30			
			Sponge spicules 1			
			Silicoflagellates 1			
			117-123 cm: Calcareous, diatomaceous ooze, grayish orange (10YR 7/4); 4 cm gravel at 117-121 cm; gradational contact.			
			smear slide: 119 cm			
			Quartz and Feldspar 5			
			Clay 20			
			Carbonate unspecified 10			
			Foraminifera <1			
			Calcareous nannos 5			
			Diatoms 55			
			Radiolarians 4			
			Sponge spicules 1			
			Silicoflagellates <1			
			Percent Carbonate (119-120 cm): 5.5			
			123-333 cm: Diatomaceous, nannofossil ooze, color changes from dusky yellow (5Y 6/4) between 123-160 cm, to yellowish gray (5Y 7/2) and light greenish gray (5GY 8/1) between 160-305 cm, and to grayish yellow green (5GY 7/2); lens of sandy, siliceous ooze between 161-166 cm; lens of glauconitic sand between 201-203 cm; bioturbation throughout the unit.			
			smear slides: 137 cm 196 cm 299 cm 331 cm			
			Quartz and Feldspar <1 <1 <1 3			
			Volcanic glass 1 <1 - -			
			Foraminifera 1 - 1 -			
			Calcareous nannos 76 82 79 72			
			Diatoms 12 15 20 25			
			Radiolarians 10 3 - -			
			Percent Carbonate (136-138 cm): 49.7 (195-197 cm): 61.4			
			(298-300 cm): 78.1 (330-332 cm): 67.3			
			Bottom topography: very gently sloping; upper portion of the eastern flank of Maurice Ewing Bank.			

Logged by: Kaharooddin, Shepley

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 50°04.1' S		CORR. DEPTH: 2088 M, 1142 FM.		
			LONGITUDE: 40°38.8' W		CORE LENGTH: 160 cm		
LITHOLOGIC DESCRIPTION							
25			0-28 cm: Radiolarian, glauconitic sand, greenish gray (5GY 6/1); gravelly sand between 13-16 cm and 24-27 cm; clayey sand between 27-28 cm; sharp contact. NOTE: smear slide is biased toward fine fraction.				
			<u>smear slide:</u> 9 cm				
			Quartz and Feldspar		15	Diatoms	51
			Clay		18	Radiolarians	8
			Volcanic glass		3	Sponge spicules	<1
			Glauconite		5		
			28-63 cm: Diatomaceous, sandy mud, light olive brown (5Y 5/6); slightly glauconitic; scattered gravel at base of unit (4-20 mm); sharp contact.				
			<u>smear slide:</u> 35 cm				
			Quartz and Feldspar		46	Diatoms	25
			Clay		10	Radiolarians	7
50			63-103 cm: Radiolarian-bearing sand, light olive gray (5Y 6/1); gravel (4 to 10 mm) scattered throughout unit; mottling throughout unit; sharp, mottled contact. NOTE: smear slide not representative of unit.				
			<u>smear slide:</u> 79 cm				
			Quartz and Feldspar		25	Carbonate unspecified	<1
			Clay		34	Diatoms	25
			Volcanic glass		1	Radiolarians	10
			Glauconite		2	Sponge spicules	3
			103-115 cm: Sandy mud, dusky yellow (5Y 6/4); contains volcanic glass and radiolarians; lens of radiolarian, diatom-bearing sand at base of unit; sharp, wavy contact.				
			115-139 cm: Sandy mud; light olive brown (5Y 5/6); laminae of radiolarian, diatom-bearing sand interspersed between 125-139 cm; gravel (4-10 mm) scattered throughout unit; sharp contact.				
			<u>smear slide:</u> 123 cm				
			Quartz and Feldspar		30		
125			139-160 cm: Radiolarian-diatomaceous mud, dusky yellow (5Y 6/4).				
			<u>smear slide:</u> 149 cm				
			Quartz and Feldspar		5		
			Clay		56		
			Volcanic glass		3		
			Diatoms		20		
			Radiolarians		15		
			Sponge spicules		<1		
			Silicoflagellates		1		
			150			Bottom topography: gently sloping; east flank of Maurice Ewing Bank.	

Logged by: Zemmels, MacKenzie, Kaharoeddin, Hattner, Graves

ISLAS ORCADAS PC 1176-13

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 50°04.2' S	CORR. DEPTH: 2209 M, 1208 FM.																																																						
			LONGITUDE: 40°30.2' W	CORE LENGTH: 128 cm																																																						
LITHOLOGIC DESCRIPTION																																																										
			<p>0-40 cm: Radiolarian, glauconitic sand; greenish gray (5GY 6/1); slightly mottled; 30 mm gravel at 17 cm; unit washed between 0-16 cm; sharp contact.</p> <p>40-49 cm: Sandy mud, moderate olive gray (5Y 4/2); gravel (2-5 mm) scattered throughout; sharp contact.</p> <p><u>smear slide:</u> <u>46 cm</u></p> <table><tr><td>Quartz and Feldspar</td><td>50</td></tr><tr><td>Clay</td><td>27</td></tr><tr><td>Volcanic glass</td><td>8</td></tr><tr><td>Glauconite</td><td>3</td></tr><tr><td>Diatoms</td><td>5</td></tr><tr><td>Radiolarians</td><td>5</td></tr><tr><td>Sponge spicules</td><td>2</td></tr></table> <p>49-103 cm: Sandy mud, light olive brown (5Y 5/6); gravel (2-5 mm) scattered between 49-89 cm; 20 mm gravel between 89-91 cm; lens of sandy, diatomaceous mud between 85-90 cm; 4 cm rounded sedimentary clasts between 92-96 cm; sharp contact.</p> <p><u>smear slides:</u> <u>62 cm</u> <u>89 cm (lens)</u></p> <table><tr><td>Quartz and Feldspar</td><td>55</td><td>45</td></tr><tr><td>Clay</td><td>16</td><td>27</td></tr><tr><td>Volcanic glass</td><td>10</td><td>1</td></tr><tr><td>Glauconite</td><td>3</td><td>2</td></tr><tr><td>Diatoms</td><td>8</td><td>20</td></tr><tr><td>Radiolarians</td><td>7</td><td>5</td></tr><tr><td>Sponge spicules</td><td>1</td><td><1</td></tr><tr><td>Silicoflagellates</td><td>-</td><td><1</td></tr></table> <p>103-128 cm: Diatomaceous, sandy mud, dusky yellow (5Y 6/4); about 1% scattered gravel (2-5 mm).</p> <p><u>smear slide:</u> <u>113 cm</u></p> <table><tr><td>Quartz and Feldspar</td><td>43</td></tr><tr><td>Clay</td><td>25</td></tr><tr><td>Volcanic glass</td><td>6</td></tr><tr><td>Glauconite</td><td>3</td></tr><tr><td>Diatoms</td><td>17</td></tr><tr><td>Radiolarians</td><td>5</td></tr><tr><td>Sponge spicules</td><td>1</td></tr><tr><td>Silicoflagellates</td><td><1</td></tr></table> <p>Bottom topography: gently sloping; east flank of Maurice Ewing Bank.</p>		Quartz and Feldspar	50	Clay	27	Volcanic glass	8	Glauconite	3	Diatoms	5	Radiolarians	5	Sponge spicules	2	Quartz and Feldspar	55	45	Clay	16	27	Volcanic glass	10	1	Glauconite	3	2	Diatoms	8	20	Radiolarians	7	5	Sponge spicules	1	<1	Silicoflagellates	-	<1	Quartz and Feldspar	43	Clay	25	Volcanic glass	6	Glauconite	3	Diatoms	17	Radiolarians	5	Sponge spicules	1	Silicoflagellates	<1
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Diatoms	8	20																																																								
Radiolarians	7	5																																																								
Sponge spicules	1	<1																																																								
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Logged by: Zemmels, MacKenzie, Kaharoeddin


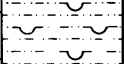




LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 50°46.1' S		CORR. DEPTH: 4876 M, 2666 FM.		
			LONGITUDE: 37°09.2' W		CORE LENGTH: 646 cm		
LITHOLOGIC DESCRIPTION							
			0-42 cm: Diatomaceous ooze, dusky yellow green (5GY 5/2); black volcanic ash scattered throughout; 1 cm volcanoclastic (lapilli) at 31 cm, gradational contact.				
			smear slide:		12 cm		
			Quartz and Feldspar	8	Calcareous nannos	1	
			Heavy minerals	2	Diatoms	77	
			Volcanic glass	6	Radiolarians	4	
			Zeolites	<1	Sponge spicules	<1	
			Carbonate unspecified	<1	Silicoflagellates	<1	
50		36	42-64 cm: Ash-bearing mud, grayish olive green (5GY 3/2); 1 cm sedimentary clast (green shale) at 43 cm; sharp contact.				
			smear slide:		53 cm		
			Quartz and Feldspar	25	Diatoms	15	
			Clay	29	Radiolarians	3	
			Volcanic glass	25	Sponge spicules	3	
100			64-133 cm: Volcanic ash, dark gray (N3); very watery, washed; sharp contact.				
			smear slide:		98 cm		
			Quartz and Feldspar	30	Carbonate unspecified	2	
			Clay	3	Diatoms	<1	
			Volcanic glass	64	Sponge spicules	1	
150			133-182 cm: Mud, grayish olive (10Y 4/2); weathered volcanoclastics between 169-172 cm; unit is highly disturbed; sharp contact.				
			182-198 cm: Diatomaceous mud, light olive gray (5Y 5/2); volcanic ash scattered throughout; sharp contact.				
			smear slide:		183 cm		
			Quartz and Feldspar	20	Radiolarians	3	
			Clay	40	Sponge spicules	1	
			Volcanic glass	<1	Silicoflagellates	<1	
			Diatoms	36			
200			198-209 cm: Volcanic ash, dark gray (N3); contains a few volcanic lapilli; sharp contact.				
			209-266 cm: Muddy, diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered throughout; gravel (to 1 cm) scattered throughout; a 3 cm sedimentary clast between 209-212 cm; sharp contact. NOTE: Smear-slide has unusually high content of volcanic ash.				
			smear slide:		242 cm		
			Quartz and Feldspar	12	Diatoms	40	
			Clay	13	Radiolarians	2	
			Volcanic glass	30	Sponge spicules	1	
			Calcareous nannos	<1	Silicoflagellates	2	
250			266-384 cm: Diatomaceous mud, grayish olive (10Y 4/2); rich in volcanic ash; laminae of volcanic ash interstratified between 337-384 cm; sharp contact.				
			smear slides:		302 cm 330 cm 361 cm 377 cm		
			Quartz and Feldspar	15	27	23	13
			Heavy minerals	-	-	12	1
			Clay	45	37	14	51
			Volcanic glass	8	15	40	<1
			Diatoms	26	16	3	32
			Radiolarians	4	4	7	1
			Sponge spicules	1	<1	<1	1
			Silicoflagellates	1	1	<1	1
300							
350		342					

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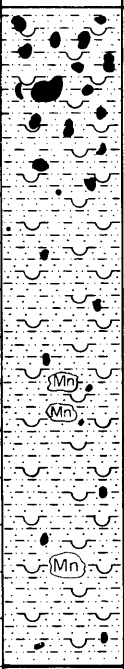
Logged by: MacKenzie, Kaharoeddin, Hattner, Jones, Graves

ISLAS ORCADAS PC 1176-15

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 50°46.1' S	CORR. DEPTH: 4876 M, 2666 FM,
			LONGITUDE: 37°09.2' W	CORE LENGTH: 646 cm
LITHOLOGIC DESCRIPTION				
350			CONTINUED	
			384-428 cm: Diatomaceous mud, grayish olive (10Y 4/2); gradational contact.	
			<u>smear slide:</u> <u>402 cm</u>	
			Quartz and Feldspar 25	
			Clay 45	
			Volcanic glass 4	
400			Diatoms 22	
			Radiolarians 3	
			Sponge spicules 1	
			Silicoflagellates <1	
			428-521 cm: Volcanic ash, dark greenish gray (5GY 4/1); laminae of coarse volcanic sand interstratified between 490-521 cm; sharp contact.	
			<u>smear slides:</u> <u>449 cm</u> <u>509 cm</u>	
450			Quartz and Feldspar 35 30	
			Clay 6 10	
			Volcanic glass 40 50	
			Diatoms 12 6	
			Radiolarians 5 3	
			Sponge spicules 2 1	
			Silicoflagellates <1 -	
500			521-564 cm: Diatomaceous mud, grayish olive (10Y 4/2); volcanic ash and lapilli scattered between 521-550 cm; volcanic ash enrichment between 550-564 cm; lens of volcanic ash between 527-530 cm; bioturbation and mottling between 521-553 cm; sharp contact.	
			564-613 cm: Volcanic ash, dark gray (N3); unit is watery, washed; sharp contact.	
			<u>smear slide:</u> <u>598 cm</u>	
			Quartz and Feldspar 25	
			Heavy minerals 1	
			Clay 5	
550			Volcanic glass 59	
			Glauconite 5	
			Diatoms 2	
			Sponge spicules 3	
			613-646 cm: Diatomaceous ooze, grayish olive (10Y 4/2); a bed of volcanic ash between 629-634 cm, dark gray (N3); sharp contact.	
			<u>smear slide:</u> <u>625 cm</u>	
			Quartz and Feldspar 10	
			Clay 15	
			Volcanic glass 5	
600			Diatoms 64	
			Radiolarians 4	
			Sponge spicules 1	
			Silicoflagellates 1	
650			Bottom topography: flat; west Georgia Basin (Malvinas Outer Basin) abyssal plain.	

Logged by: MacKenzie, Kaharoeddin, Hattner, Jones, Graves

ISLAS ORCADAS PC 1176-16

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 50°53.8' S	CORR. DEPTH: 2880 M, 1575 FM.	
			LONGITUDE: 33°57.6' W	CORE LENGTH: 140 cm	
LITHOLOGIC DESCRIPTION					
20		0-140 cm: Diatomaceous, sandy mud, dusky yellow (5Y 6/4); between 0-20 cm, very gravelly (4-50 mm); between 20-40 cm, the unit is slightly gravelly (4-30 mm); 30 mm gravel with manganese-oxide coating at 34 cm; scattered gravel (2-5 mm) between 40-140 cm; 3 cm manganese nodules at 80 and 86 cm, and 4 cm manganese nodule at 119 cm; top of core (0-10 cm) is slightly washed.			
40		smear slides:	5 cm	70 cm	135 cm
		Quartz and Feldspar	15	20	15
		Clay	39	65	47
		Rock fragments	3	2	-
		Volcanic glass	7	8	8
		Micro-Mn nodules	-	1	<1
		Diatoms	35	3	26
		Radiolarians	1	1	1
		Sponge spicules	<1	<1	2
		Silicoflagellates	<1	-	1
80			Bottom topography: moderately sloping; easternmost portion of the apex of northeast Georgia Rise.		
100					
120					
140					

ISLAS ORCADAS PC 1176-19

LENGTH (cm)	LITHOLOGY	S DEFORMATION	LATITUDE: 51°29.0' S	CORR. DEPTH: 1767 M, 966 FM.																								
			LONGITUDE: 33°21.7' W	CORE LENGTH: 465 cm																								
LITHOLOGIC DESCRIPTION																												
			0-33 cm: Gravelly sand, medium greenish gray (5GY 5/1); contains 5% gravel (2-30 mm); sand-size clastics consist of quartz, feldspar and volcanic glass; biogenic materials are primarily radiolarians; abundant glauconite; top 10 cm is slightly washed; gradational contact.																									
100			33-50 cm: Sandy, diatomaceous ooze, dusky yellowish gray (5Y 6/2); contains abundant gravel (to 15 mm) between 35-40 cm; sand-size clastics consist of quartz, feldspar and volcanic glass; radiolarians and glauconite common; 45-50 cm interval is primarily diatomaceous ooze; sharp contact.																									
200			50-135 cm: Diatomaceous, sandy mud, moderate olive brown (5Y 4/4); 2-10 mm gravel abundant between 50-93 cm; 3 cm rounded gravel between 95-98 cm and 110-113 cm; sharp contact.																									
			<table><tr><td>smear slides:</td><td>68 cm</td><td>108 cm</td></tr><tr><td>Quartz and Feldspar</td><td>45</td><td>30</td></tr><tr><td>Clay</td><td>10</td><td>35</td></tr><tr><td>Volcanic glass</td><td>2</td><td>4</td></tr><tr><td>Diatoms</td><td>37</td><td>30</td></tr><tr><td>Radiolarians</td><td>5</td><td>1</td></tr><tr><td>Sponge spicules</td><td>1</td><td><1</td></tr><tr><td>Silicoflagellates</td><td><1</td><td><1</td></tr></table>		smear slides:	68 cm	108 cm	Quartz and Feldspar	45	30	Clay	10	35	Volcanic glass	2	4	Diatoms	37	30	Radiolarians	5	1	Sponge spicules	1	<1	Silicoflagellates	<1	<1
smear slides:	68 cm	108 cm																										
Quartz and Feldspar	45	30																										
Clay	10	35																										
Volcanic glass	2	4																										
Diatoms	37	30																										
Radiolarians	5	1																										
Sponge spicules	1	<1																										
Silicoflagellates	<1	<1																										
		234	135-187 cm: Muddy, diatomaceous ooze, dusky yellow (5Y 6/4); abundant gravel (4-10 mm) between 169-173 cm and 180-184 cm; interstratified laminae of ooze abundant in volcanic ash and radiolarians; sharp contact. NOTE: Smear-slide is not representative of muddy, diatomaceous ooze.																									
300			<table><tr><td>smear slide:</td><td>154 cm</td></tr><tr><td>Quartz and Feldspar</td><td>15</td></tr><tr><td>Clay</td><td>10</td></tr><tr><td>Volcanic glass</td><td>6</td></tr><tr><td>Diatoms</td><td>65</td></tr><tr><td>Radiolarians</td><td>3</td></tr><tr><td>Silicoflagellates</td><td>1</td></tr></table>		smear slide:	154 cm	Quartz and Feldspar	15	Clay	10	Volcanic glass	6	Diatoms	65	Radiolarians	3	Silicoflagellates	1										
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Volcanic glass	6																											
Diatoms	65																											
Radiolarians	3																											
Silicoflagellates	1																											
400			187-224 cm: Diatomaceous ooze, grayish yellow (5Y 8/4); between 204-216 cm, sinuous intermixing of diatomaceous ooze and diatomaceous sand, sedimentary cast filled with sand between 187-189 cm and 193-195 cm; sharp contact.																									
			224-465 cm: Muddy, diatomaceous ooze, dusky yellow (5Y 6/4); gravel scattered throughout; flow-in between 234-465 cm. NOTE: Smear-slide biased toward diatoms.																									
500			<table><tr><td>smear slide:</td><td>228 cm</td></tr><tr><td>Quartz and Feldspar</td><td>10</td></tr><tr><td>Clay</td><td>10</td></tr><tr><td>Volcanic glass</td><td>3</td></tr><tr><td>Diatoms</td><td>76</td></tr><tr><td>Radiolarians</td><td>1</td></tr></table>		smear slide:	228 cm	Quartz and Feldspar	10	Clay	10	Volcanic glass	3	Diatoms	76	Radiolarians	1												
smear slide:	228 cm																											
Quartz and Feldspar	10																											
Clay	10																											
Volcanic glass	3																											
Diatoms	76																											
Radiolarians	1																											
Bottom topography: flat; apex of sedimentary sequence on the eastern apex of the northeastern Georgia Rise.																												

Logged by: Zemmels, MacKenzie, Kaharoeddin

ISLAS ORCADAS PC 1176-20

27

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 51°28.2' S	CORR. DEPTH: 2081 M, 1138 FM.						
			LONGITUDE: 33°44.3' W	CORE LENGTH: 490 cm						
LITHOLOGIC DESCRIPTION										
			0-174 cm: Diatomaceous, sandy mud, color changes from light olive gray (5Y 5/2) to moderate olive brown (5Y 4/4) to dark greenish gray (5GY 4/1); gravel (to 1.5 cm) scattered throughout the unit; 4 cm gravel between 36-44 cm; 2 cm gravel between 96-102 cm; lenses of gravelly, glauconitic sand between 60-68 cm and 96-102 cm; lens of diatomaceous ooze between 136-152 cm; 0-12 cm slightly disturbed; gradational contact. NOTE: About 30% of the coarse fraction of each slide is left out; therefore, the percentages of clay and diatoms on the following slides are disproportionately large.							
			smear slides:	5 cm	24 cm	35 cm	66 cm	91 cm	126 cm	147 cm
			Quartz and Feldspar	12	15	15	18	20	22	10
			Heavy minerals	-	-	<1	3	1	1	1
			Clay	38	37	25	20	29	34	15
			Volcanic glass	-	<1	7	5	5	5	2
			Glaucinite	2	1	2	9	2	4	<1
			Diatoms	45	45	45	30	40	25	70
			Radiolarians	1	2	5	10	3	5	2
			Sponge spicules	<1	<1	1	3	<1	2	<1
			Silicoflagellates	2	-	<1	2	<1	2	<1
			174-300 cm: Diatomaceous, foraminiferal ooze, greenish gray (5G 6/1); gravel (to 1 cm) scattered throughout the unit; decreasing foraminiferal content with depth; disturbed section between 266-314 cm; gradational contact.							
			smear slides:	232 cm			295 cm			
			Quartz and Feldspar	1			2			
			Clay	14			16			
			Volcanic glass	-			-			
			Glaucinite	<<1			-			
			Carbonate unspecified	15			20			
			Foraminifera	35			15			
			Calcareous nannos	1			2			
			Diatoms	30			40			
			Radiolarians	2			2			
			Silicoflagellates	2			3			
			Percent Carbonate (231-233 cm): 32.7			(294-296 cm): 23.5				
			300-490 cm: Diatomaceous, sandy mud, light olive gray (5Y 5/2); gravel (to 1.5 cm) scattered throughout unit; 3 cm gravel between 331-334 cm, 338-341 cm, 391-395 cm and 424-428 cm.							
			smear slides:	329 cm	359 cm	388 cm	485 cm			
			Quartz and Feldspar	23	25	23	25			
			Heavy minerals	-	<1	-	-			
			Clay	29	49	41	42			
			Volcanic glass	8	1	10	9			
			Glaucinite	3	1	-	<1			
			Foraminifera	<1	-	-	-			
			Diatoms	30	20	19	16			
			Radiolarians	5	4	5	6			
			Sponge spicules	<1	<1	2	2			
			Silicoflagellates	2	-	<1	<1			
			Bottom topography: very slightly sloping; on the uppermost portion of a thick, westerly-dipping, sedimentary sequence on the central apex of the northeastern Georgia Rise.							

Logged by: Kaharoeddin, Shepley, Hattner

ISLAS ORCADAS PC 1176-21

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 51°26.8' S	CORR. DEPTH: 2281 M, 1247 FM,						
			LONGITUDE: 33°51.9' W	CORE LENGTH: 590 cm						
LITHOLOGIC DESCRIPTION										
			0-590 cm: Diatomaceous ooze, color changes from grayish olive (10Y 4/2) to dusky yellow (5Y 6/4) to moderate olive brown (5Y 4/4); scattered gravel (to 2 cm) between 34-128 cm; scattered gravel (to 1 cm) between 216-518 cm; 3 cm gravel at 317-320 cm; 2 cm gravel at 446-448 cm; laminae rich with volcanic ash between 40-90 cm, 408-412 cm, and 454-485 cm.							
			smear slides:	5 cm	70 cm	190 cm	329 cm	416 cm	470 cm	551 cm
100			Quartz and Feldspar	8	8	8	5	10	8	5
			Clay	10	12	2	17	15	12	10
			Volcanic glass	-	2	<1	2	2	3	-
			Glauconite	<1	<1	-	<1	<1	-	-
			Carbonate unspecified	<<1	-	-	-	-	-	-
			Diatoms	75	70	83	70	66	73	80
			Radiolarians	2	2	3	4	7	2	2
			Sponge spicules	<1	<1	-	<1	<1	<1	-
			Silicoflagellates	5	6	4	2	<1	2	3
200			Bottom topography: gently, to moderately sloping; on the central portion of a thick, westerly-dipping, sedimentary sequence on the western apex of the northeastern Georgia Rise.							
300		288								
400										
500										
600										

Logged by: Shepley, Kaharoeddin, Graves

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 51°25.9' S	CORR. DEPTH: 2542 M, 1390 FM.
			LONGITUDE: 33°59.4' W	CORE LENGTH: 256 cm
LITHOLOGIC DESCRIPTION				
			0-101 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); gravel (to 1 cm) scattered throughout; 3 cm gravel between 24-26 cm and 40-43 cm; volcanic ash laminae between 80-83 cm and 91-92 cm; unit is washed between 40-101 cm along one side of core liner; gradational contact.	
			smear slides:	<u>9 cm</u> <u>57 cm</u> <u>92 cm</u>
			Quartz and Feldspar	3 6 40
			Clay	25 18 5
			Volcanic glass	9 10 41
			Glaucinite	- <1 7
			Diatoms	60 60 5
			Radiolarians	2 4 1
			Sponge spicules	<1 <1 <1
			Silicoflagellates	1 2 1
			101-160 cm: Diatomaceous mud, grayish olive (10Y 4/2); gravel (to 2 cm) scattered throughout; entire unit is washed along one side of core liner; gradational contact.	
			smear slide:	<u>137 cm</u>
			Quartz and Feldspar	8
			Heavy minerals	1
			Clay	40
			Volcanic glass	12
			Glaucinite	3
			Diatoms	30
			Radiolarians	5
			Sponge spicules	1
			Silicoflagellates	<1
			160-256 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); core liner imploded between 208-230 cm; a piece of broken core liner at 161 cm; entire unit is flow-in.	
			smear slide:	<u>180 cm</u>
			Quartz and Feldspar	10
			Heavy minerals	<1
			Clay	15
			Volcanic glass	10
			Glaucinite	1
			Diatoms	60
			Radiolarians	2
			Sponge spicules	<1
			Silicoflagellates	2
			Bottom topography: gently sloping; on the western portion of a thick, westerly-dipping, sedimentary sequence on the western apex of the northeastern Georgia Rise.	

ISLAS ORCADAS PC 1176-24

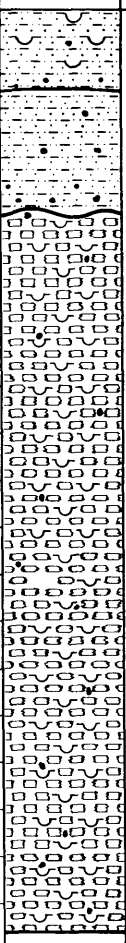
LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 51°47.2' S	CORR. DEPTH: 1970 M, 1077 FM.
			LONGITUDE: 33°39.3' W	CORE LENGTH: 546 cm
LITHOLOGIC DESCRIPTION				
			0-61 cm: Diatomaceous, sandy mud, mottled dusky yellow (5Y 6/4) and dusky yellowish green (10GY 3/2); sand content variable in irregular zones; gravel (2 to 50 mm) scattered throughout; gravelly layer between 14 to 18 cm; gradational contact. NOTE: Smear-slide preparations for this unit are biased towards the fine fraction, as most sand not smeared on slide.	
			smear slides:	8 cm 35 cm
			Quartz and Feldspar	25 37
			Clay	15 26
			Volcanic glass	2 3
			Glaucinite	3 5
			Diatoms	53 23
			Radiolarians	1 5
			Sponge spicules	1 1
			Silicoflagellates	- <1
			61-122 cm: Diatomaceous sand, dark grayish olive (10Y 3/2); sand rich in volcanic fragments; coarse gravel layer between 68-71 cm; 5 cm gravel between 92-97 cm; sharp contact.	
			122-251 cm: Diatomaceous, foraminiferal ooze, grading from greenish gray (5G 6/1) to light olive gray (5Y 6/1); rich in gravel (5mm to 5 cm) between 122-150 cm with high percentage of mud; gravel (to 5 mm) scattered throughout; a 2 cm gravel between 249-251 cm; sharp contact. NOTE: Smear-slide is slightly biased toward diatom content.	
			smear slide:	184 cm
			Quartz and Feldspar	10
			Clay	3
			Carbonate unspecified	15
			Foraminifera	40
			Calcareous nannos	2
			Diatoms	27
			Radiolarians	2
			Silicoflagellates	1
			Percent Carbonate (183-185 cm): 39.7	
			251-303 cm: Diatomaceous, sandy mud, light olive gray (5Y 5/2); stringers of sand between 280-288 cm; gravel (to 1 cm) scattered throughout; 3 cm gravel between 267-270 cm, and 4 cm rounded gravel between 294-298 cm; unit moderately consolidated; sharp contact, which coincides with end of core section. NOTE: Smear-slide is biased toward diatom content; small percentage of sand is not on the slide.	
			smear slide:	278 cm
			Quartz and Feldspar	35
			Clay	22
			Volcanic glass	5
			Diatoms	34
			Radiolarians	4
			Sponge spicules	<1
			Silicoflagellates	<1
			303-333 cm: Sandy mud, greenish gray (5G 6/1); gravel (4 to 15 mm) scattered throughout; moderately consolidated; contains small percentage of biogenics: radiolarians, diatoms, and sponge spicules; clastics consist primarily of volcanic fragments, quartz and feldspar; gradational contact.	
			333-367 cm: Diatomaceous, sandy mud, dusky yellow (5Y 6/4); scattered gravel (2-5 mm); sharp contact, slightly curved due to frictional wall effects (drag) along edge of core liner.	
		303		
		317		
		350		

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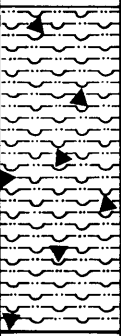
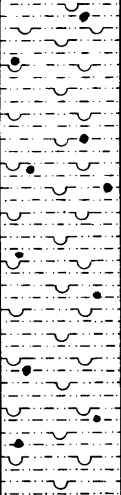

Logged by: Zemmels, Jones, Hattner, Kaharoeddin

ISLAS ORCADAS PC 1176-24

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 51°47,2' S	CORR. DEPTH: 1970 M, 1077 FM.
			LONGITUDE: 33°39,3' W	CORE LENGTH: 546 cm
LITHOLOGIC DESCRIPTION				
350			CONTINUED	
			<u>smear slide:</u>	<u>352 cm</u>
			Quartz and Feldspar	35
			Clay	37
			Volcanic glass	2
			Glaucinite	1
			Diatoms	20
			Radiolarians	5
			Silicoflagellates	<1
400			367-394 cm: Sandy mud, dark greenish gray (5G 4/1); gravel (to 5 mm) scattered throughout; 5-20 mm gravel abundant at bottom of unit; sharp, wavy contact. NOTE: Smear-slide is slightly biased towards the fine fraction.	
			<u>smear slide:</u>	<u>382 cm</u>
			Quartz and Feldspar	35
			Clay	50
			Volcanic glass	2
			Glaucinite	1
			Diatoms	11
			Radiolarians	1
			Sponge spicules	<1
450			394-546 cm: Diatomaceous, calcareous ooze, light olive gray (5Y 6/1); gravel (to 4 mm) scattered throughout; only top 6 cm undisturbed (400-546 cm is flow-in); bottom 40 cm (506-546 cm) also washed.	
			<u>smear slide:</u>	<u>406 cm</u>
			Quartz and Feldspar	10
			Clay	15
			Volcanic glass	2
			Carbonate unspecified	17
			Foraminifera	25
			Diatoms	30
			Radiolarians	1
			Sponge spicules	<1
			Silicoflagellates	<1
500			<u>Percent Carbonate (405-407): 23.2</u>	
550			Bottom topography: gently sloping; near apex of a thick, westerly-dipping, sedimentary sequence on the western flank of the northeastern Georgia Rise.	

Logged by: Zemmels, Jones, Hattner, Kaharoeddin

ISLAS ORCADAS PC 1176-25

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 52°12.4' S	CORR. DEPTH: 2418 M, 1322 FM																									
			LONGITUDE: 32°38.0' W	CORE LENGTH: 176 cm																									
LITHOLOGIC DESCRIPTION																													
50		23	0-69 cm: Muddy, diatomaceous ooze, dusky yellow green (5GY 5/2), changes sharply at 20 cm to light olive gray (5Y 6/1); volcanoclastic fragments (lapilli-size) scattered throughout; sharp contact.																										
			<div><div>smear slide:</div><div>45 cm</div><table><tr><td>Quartz and Feldspar</td><td>25</td></tr><tr><td>Clay</td><td>10</td></tr><tr><td>Diatoms</td><td>64</td></tr><tr><td>Radiolarians</td><td>1</td></tr><tr><td>Sponge spicules</td><td><1</td></tr><tr><td>Silicoflagellates</td><td><1</td></tr></table></div>		Quartz and Feldspar	25	Clay	10	Diatoms	64	Radiolarians	1	Sponge spicules	<1	Silicoflagellates	<1													
Quartz and Feldspar	25																												
Clay	10																												
Diatoms	64																												
Radiolarians	1																												
Sponge spicules	<1																												
Silicoflagellates	<1																												
100			69-176 cm: Diatomaceous mud, variegated greenish gray (5G 6/1 and 5GY 6/1); mud content variable; frequency and thickness of muddy layers increases with depth; scattered gravel (2-30 mm); layering in unit distorted into upward-pointing chevrons.																										
			<div><div>smear slides:</div><div>76 cm88 cm160 cm</div><table><tr><td>Quartz and Feldspar</td><td>20</td><td>25</td><td>31</td></tr><tr><td>Clay</td><td>38</td><td>34</td><td>33</td></tr><tr><td>Glaucinite</td><td><1</td><td>-</td><td>1</td></tr><tr><td>Micro-Mn nodules</td><td>1</td><td>-</td><td><1</td></tr><tr><td>Diatoms</td><td>40</td><td>40</td><td>30</td></tr><tr><td>Radiolarians</td><td>1</td><td>1</td><td>5</td></tr><tr><td>Sponge spicules</td><td><1</td><td>-</td><td><1</td></tr></table></div>	Quartz and Feldspar	20	25	31	Clay	38	34	33	Glaucinite	<1	-	1	Micro-Mn nodules	1	-	<1	Diatoms	40	40	30	Radiolarians	1	1	5	Sponge spicules	<1
Quartz and Feldspar	20	25	31																										
Clay	38	34	33																										
Glaucinite	<1	-	1																										
Micro-Mn nodules	1	-	<1																										
Diatoms	40	40	30																										
Radiolarians	1	1	5																										
Sponge spicules	<1	-	<1																										
150			Bottom topography: gently sloping; eastern sediment-covered flank of the northeastern Georgia Rise.																										

Logged by: Zemmelis

Logged by: MacKenzie

ISLAS ORCADAS PC 1176-34

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°28.5' S	CORR. DEPTH: 4486 M, 2453 FM.				
			LONGITUDE: 21°58.8' W	CORE LENGTH: 1052 cm				
LITHOLOGIC DESCRIPTION								
100		135	0-175 cm: Diatomaceous ooze, medium gray (N5); ferromanganese-stained layers interspersed throughout; highly-stained layers between 29-34 cm, 46-57 cm, 71-75 cm, 92-96 cm; volcanic ash layers between 137-140 cm, 159-164 cm; some gravel (4-10 mm) scattered between 14-18 cm; sharp contact.					
			<u>smear slides:</u>					
			<u>12 cm</u>	<u>71 cm</u>	<u>109 cm</u>	<u>153 cm</u>		
			Quartz and Feldspar	4	10	2	5	
			Heavy minerals	<1	<1	-	-	
			Clay	20	20	25	5	
			Volcanic glass	1	-	3	1	
			Micro-Mn nodules	-	15	-	-	
			Diatoms	75	53	70	88	
			Radiolarians	<1	2	<1	1	
Silicoflagellates	<1	<1	<1	<1				
200			175-180 cm: Volcanic ash, grayish brown (5YR 3/2); layer of pumice lapilli, (4-15 mm) at top of unit; sharp contact.					
			180-325 cm: Diatomaceous mud, light olive gray (5Y 5/2); volcanic ash scattered throughout; a few scattered lapilli; higher concentrations of volcanic ash between 280-310 cm; gradational contact.					
			<u>smear slides:</u>					
			<u>187 cm</u>	<u>216 cm</u>				
			Quartz and Feldspar	5	5			
			Clay	60	63			
			Volcanic glass	<1	2			
			Micro-Mn nodules	<1	<1			
			Diatoms	35	30			
			Radiolarians	-	<1			
300			325-572 cm: Muddy, diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered between 350-385 cm, 400-435 cm, 445-451 cm, 512-520 cm; laminae of volcanic ash at 537 cm, 543 cm, 546 cm; a few scattered lapilli; gradational contact.					
			<u>smear slides:</u>					
			<u>456 cm</u>	<u>535 cm</u>				
			Quartz and Feldspar	25	15			
			Clay	20	8			
			Volcanic glass	2	3			
			Diatoms	53	73			
			Radiolarians	-	1			
			Sponge spicules	-	<1			
			Silicoflagellates	<1	-			
400		442	572-668 cm: Muddy, diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered throughout; a few scattered lapilli; higher concentrations of ash between 652-658 cm; 1 cm layer of volcanic ash at 660-661 cm; sharp contact.					
			<u>smear slide:</u>					
			<u>592 cm</u>					
			Quartz and Feldspar	20				
			Clay	25				
			Volcanic glass	3				
			Diatoms	51				
			Radiolarians	1				
			Sponge spicules	<1				
			500			668-681 cm: Volcanic ash, grayish black (N2); sharp contact.		
<u>smear slide:</u>								
<u>676 cm</u>								
Quartz and Feldspar	15							
Volcanic glass	84							
Diatoms	1							
600								
700								

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ISLAS ORCADAS PC 1176-34

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°28.5' S	CORR. DEPTH: 4486 M, 2453 FM.
			LONGITUDE: 21°58.8' W	CORE LENGTH: 1052 cm
LITHOLOGIC DESCRIPTION				
700			CONTINUED	
		748	681-837 cm: Ash-bearing, diatomaceous ooze, light olive gray (5Y 5/2); between 681-710 cm, almost totally diatomaceous ooze; 6 mm scoriae at 815 cm; ash layer between 835-837 cm; sharp contact.	
			<u>smear slides:</u>	<u>740 cm</u> <u>827 cm</u>
800			Quartz and Feldspar	2 5
			Clay	25 5
			Volcanic glass	2 20
			Diatoms	71 68
			Radiolarians	- 2
			Silicoflagellates	- <1
			837-1052 cm: Diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered between 900-995 cm; grayish black (N2) volcanic ash layers between 908-910 cm and 1022-1024 cm; a few scattered lapilli between 910-1052 cm.	
900			<u>smear slides:</u>	<u>888 cm</u> <u>918 cm</u> <u>1041 cm</u>
			Quartz and Feldspar	10 5 3
			Clay	8 35 20
			Volcanic glass	1 10 8
			Diatoms	80 50 69
			Radiolarians	- <1 -
			Silicoflagellates	1 <1 <1
1000			Bottom topography: gently sloping; approximately 10 km east of a 200 fm (366 m), high volcanic rise, and 150 km east of the South Sandwich Trench.	

Logged by: Zemmel, MacKenzie, Kaharoeddin

ISLAS ORCADAS PC 1176-36

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°22.7' S		CORR. DEPTH: 4175 M, 2283 FM.			
			LONGITUDE: 16°59.7' W		CORE LENGTH: 1110 CM			
LITHOLOGIC DESCRIPTION								
			0-6 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); lower boundary marked by micromanganese nodule laminae; sharp contact.					
			smear slide:		3 cm			
			Quartz and Feldspar	6				
			Heavy minerals	1				
			Clay	3				
			Volcanic glass	10				
100			Diatoms	74				
			Radiolarians	4				
			Silicoflagellates	2				
			6-16 cm: Diatomaceous mud, olive gray (5Y 4/1); a wavy, volcanic ash lamina at 14 cm; gradational contact.					
			smear slide:		15 cm			
			Quartz and Feldspar	3				
			Heavy minerals	<1				
200			Clay	53				
			Volcanic glass	7				
			Diatoms	35				
			Radiolarians	2				
			Sponge spicules	<1				
			Silicoflagellates	<1				
			16-226 cm: Diatomaceous ooze, olive gray (5Y 4/1); volcanic ash scattered throughout; 2 cm sedimentary clast at 149-151 cm; gradational contact.					
			smear slide:		130 cm			
300			Quartz and Feldspar	4				
			Clay	30				
			Volcanic glass	7				
			Glaucinite	<1				
			Diatoms	55				
			Radiolarians	3				
			Silicoflagellates	1				
		304						
			226-296 cm: Muddy, diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered throughout; gradational contact.					
			smear slide:		234 cm			
			Quartz and Feldspar	7				
			Heavy minerals	1				
			Clay	38				
			Volcanic glass	5				
			Glaucinite	1				
			Diatoms	43				
			Radiolarians	4				
			Sponge spicules	<1				
			Silicoflagellates	<1				
500								
		501						
			296-725 cm: Diatomaceous ooze, grayish olive (10Y 4/2) to light olive gray (5Y 6/1) to yellowish gray (5Y 8/1); zones rich in volcanic ash between 417-425 cm, 560-566 cm, 628-640 cm, 660-679 cm, 695-699 cm, and 716-725 cm; volcanic ash also scattered throughout unit; 3 cm angular gravel at 304-307 cm; 2 cm gravel at 312-314 cm; scattered gravel (to 1 cm) between 370-385 cm; 1 cm gravel at 474-475 cm; 2 cm sedimentary clast between 647-649 cm; bioturbation between 532-725 cm; sharp contact.					
			smear slides:		307 cm	432 cm		
					561 cm	638 cm		
					695 cm			
600			Quartz and Feldspar	9	4	5	6	12
			Heavy minerals	1	<1	4	4	2
			Clay	20	27	15	10	8
			Volcanic glass	5	3	8	28	23
			Diatoms	63	62	67	45	48
			Radiolarians	1	3	1	6	6
			Sponge spicules	<1	-	-	-	-
			Silicoflagellates	<1	<1	<1	1	1
700								

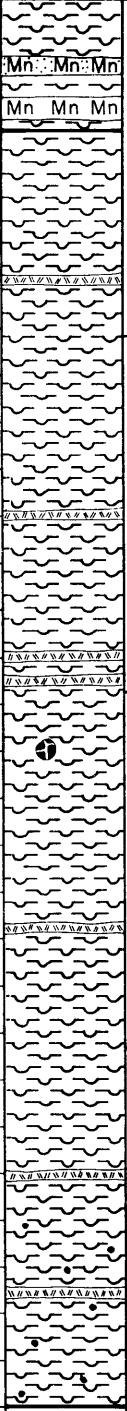
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Logged by: MacKenzie, Kaharoeddin, Hattner, Graves

Logged by: MacKenzie, Kaharoeddin, Hattner, Graves

ISLAS ORCADAS PC 1176-38

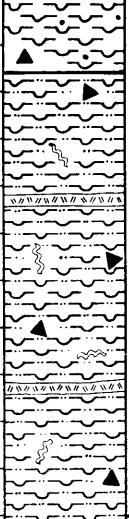
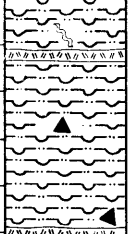
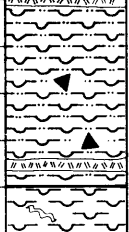
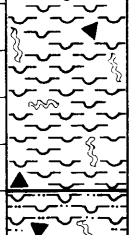
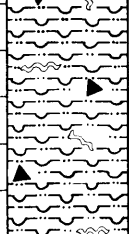
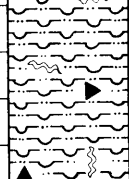
LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°15.8' S	CORR. DEPTH: 4587 M, 2508 FM.																																																																																																																																																																														
			LONGITUDE: 12°49.1' W	CORE LENGTH: 1200 cm																																																																																																																																																																														
LITHOLOGIC DESCRIPTION																																																																																																																																																																																		
			<p>0-112 cm: Diatomaceous ooze, very pale orange (10YR 8/2), pale yellowish brown (10YR 6/2) to grayish brown (5YR 3/2); lamina of sand and micromanganese nodules between 49-50 cm; laminae of diatomaceous ooze, highly stained with ferromanganese oxide, between 85 and 102 cm; lens rich in micromanganese nodules between 104-110 cm; sharp contact.</p> <table><thead><tr><th>smear slides:</th><th>15 cm</th><th>66 cm</th><th>99 cm</th></tr></thead><tbody><tr><td>Quartz and Feldspar</td><td>4</td><td>1</td><td>4</td></tr><tr><td>Heavy minerals</td><td><1</td><td>-</td><td>-</td></tr><tr><td>Clay</td><td>6</td><td>3</td><td>6</td></tr><tr><td>Volcanic glass</td><td>2</td><td><1</td><td>8</td></tr><tr><td>Micro-Mn nodules</td><td>-</td><td>-</td><td><1</td></tr><tr><td>Diatoms</td><td>83</td><td>85</td><td>79</td></tr><tr><td>Radiolarians</td><td>2</td><td>1</td><td>2</td></tr><tr><td>Sponge spicules</td><td><1</td><td>-</td><td>-</td></tr><tr><td>Silicoflagellates</td><td>3</td><td>10</td><td>1</td></tr></tbody></table> <p>112-1200 cm: Diatomaceous ooze, color changes from olive gray (5Y 4/1) to light olive gray (5Y 5/2); interspersed volcanic ash laminae, greenish black (5GY 2/1) throughout the unit, gravel (to 1 cm) scattered between 1035-1200 cm; 3 cm sedimentary clast between 643-646 cm; sediment thins out between 271-285 cm (slightly disturbed).</p> <table><thead><tr><th>smear slides:</th><th>191 cm</th><th>324 cm</th><th>431 cm</th><th>572 cm</th><th>615 cm</th><th>633 cm</th></tr></thead><tbody><tr><td>Quartz and Feldspar</td><td>7</td><td>11</td><td>13</td><td>14</td><td>8</td><td>8</td></tr><tr><td>Heavy minerals</td><td><1</td><td>-</td><td>-</td><td><1</td><td>-</td><td>-</td></tr><tr><td>Clay</td><td>9</td><td>9</td><td>40</td><td>13</td><td>5</td><td>8</td></tr><tr><td>Volcanic glass</td><td>2</td><td>10</td><td>11</td><td>6</td><td>5</td><td>5</td></tr><tr><td>Foraminifera</td><td>-</td><td>-</td><td><1</td><td>-</td><td>-</td><td>-</td></tr><tr><td>Calcareous nannos</td><td>-</td><td>-</td><td>-</td><td><1</td><td>-</td><td>-</td></tr><tr><td>Diatoms</td><td>82</td><td>69</td><td>30</td><td>67</td><td>80</td><td>77</td></tr><tr><td>Radiolarians</td><td><1</td><td>1</td><td>5</td><td><1</td><td>2</td><td><1</td></tr><tr><td>Sponge spicules</td><td>-</td><td>-</td><td><1</td><td><1</td><td><1</td><td><1</td></tr><tr><td>Silicoflagellates</td><td><1</td><td>-</td><td>1</td><td><1</td><td><1</td><td>2</td></tr></tbody></table> <table><thead><tr><th></th><th>756 cm</th><th>847 cm</th><th>929 cm</th><th>991 cm</th><th>1073 cm</th><th>1165 cm</th></tr></thead><tbody><tr><td>Quartz and Feldspar</td><td>6</td><td>8</td><td>14</td><td>3</td><td>5</td><td>5</td></tr><tr><td>Clay</td><td>5</td><td>7</td><td>12</td><td>9</td><td>4</td><td>5</td></tr><tr><td>Volcanic glass</td><td>2</td><td>6</td><td>8</td><td>7</td><td>6</td><td>8</td></tr><tr><td>Diatoms</td><td>85</td><td>78</td><td>65</td><td>80</td><td>81</td><td>80</td></tr><tr><td>Radiolarians</td><td>1</td><td><<1</td><td>1</td><td>1</td><td>2</td><td>2</td></tr><tr><td>Sponge spicules</td><td><1</td><td>-</td><td>-</td><td>-</td><td><1</td><td>-</td></tr><tr><td>Silicoflagellates</td><td>1</td><td>1</td><td><1</td><td><1</td><td>2</td><td><1</td></tr></tbody></table> <p>Bottom topography: gently sloping; regional "basin and range" topography, east of South Sandwich Island.</p>			smear slides:	15 cm	66 cm	99 cm	Quartz and Feldspar	4	1	4	Heavy minerals	<1	-	-	Clay	6	3	6	Volcanic glass	2	<1	8	Micro-Mn nodules	-	-	<1	Diatoms	83	85	79	Radiolarians	2	1	2	Sponge spicules	<1	-	-	Silicoflagellates	3	10	1	smear slides:	191 cm	324 cm	431 cm	572 cm	615 cm	633 cm	Quartz and Feldspar	7	11	13	14	8	8	Heavy minerals	<1	-	-	<1	-	-	Clay	9	9	40	13	5	8	Volcanic glass	2	10	11	6	5	5	Foraminifera	-	-	<1	-	-	-	Calcareous nannos	-	-	-	<1	-	-	Diatoms	82	69	30	67	80	77	Radiolarians	<1	1	5	<1	2	<1	Sponge spicules	-	-	<1	<1	<1	<1	Silicoflagellates	<1	-	1	<1	<1	2		756 cm	847 cm	929 cm	991 cm	1073 cm	1165 cm	Quartz and Feldspar	6	8	14	3	5	5	Clay	5	7	12	9	4	5	Volcanic glass	2	6	8	7	6	8	Diatoms	85	78	65	80	81	80	Radiolarians	1	<<1	1	1	2	2	Sponge spicules	<1	-	-	-	<1	-	Silicoflagellates	1	1	<1	<1	2	<1
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Volcanic glass	2	10	11	6	5	5																																																																																																																																																																												
Foraminifera	-	-	<1	-	-	-																																																																																																																																																																												
Calcareous nannos	-	-	-	<1	-	-																																																																																																																																																																												
Diatoms	82	69	30	67	80	77																																																																																																																																																																												
Radiolarians	<1	1	5	<1	2	<1																																																																																																																																																																												
Sponge spicules	-	-	<1	<1	<1	<1																																																																																																																																																																												
Silicoflagellates	<1	-	1	<1	<1	2																																																																																																																																																																												
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Radiolarians	1	<<1	1	1	2	2																																																																																																																																																																												
Sponge spicules	<1	-	-	-	<1	-																																																																																																																																																																												
Silicoflagellates	1	1	<1	<1	2	<1																																																																																																																																																																												

Logged by: Kaharoeddin, Shepley, Graves

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°12.8' S		CORR. DEPTH: 4128 M, 2257 FM.									
			LONGITUDE: 10°08.4' W		CORE LENGTH: 1178 cm									
LITHOLOGIC DESCRIPTION														
200			0-92 cm: Diatomaceous ooze, dusky yellow (5Y 6/4); mottled; scattered volcanic ash; gradational contact.											
			smear slides:											
			6 cm		68 cm									
			Quartz and Feldspar	3	1									
			Heavy minerals	<1	-									
			Clay	20	2									
			Volcanic glass	5	4									
			Diatoms	63	82									
			Radiolarians	7	3									
			Silicoflagellates	2	8									
400		303	92-355 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); bioturbation between 200-210 cm; 2 cm manganese nodules between 334-336 cm; scattered volcanic ash; sharp contact.											
			smear slides:											
			105 cm		210 cm		297 cm							
			Quartz and Feldspar	3	2	10								
			Heavy minerals	1	-	<1								
			Clay	33	25	52								
			Volcanic glass	17	10	3								
			Micro-Mn nodules	5	-	-								
			Diatoms	36	60	30								
			Radiolarians	2	3	5								
Silicoflagellates	3	<1	<1											
600		573	355-1178 cm: Diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash-enriched beds at 360-362 cm, 385-428 cm, 513-528 cm, 549-616 cm, 677-680 cm, 750-753 cm, 780-804 cm, 877-908 cm, 1138-1159 cm; interspersed volcanic ash laminae between 1030-1120 cm; bioturbation between 355-360 cm, 390-405 cm, 440-510 cm, 643-677 cm, 780-794 cm, 865-872 cm, 890-905 cm, 915-1160 cm; decimated manganese nodule and manganese-enriched bed at 700-706 cm; scattered volcanic lapilli.											
			smear slides:											
			362 cm		380 cm		518 cm		550 cm		619 cm			
			Quartz and Feldspar	5	4	4	3	5						
			Clay	20	7	10	12	15						
			Volcanic glass	7	15	40	4	10						
			Diatoms	68	73	45	80	63						
			Radiolarians	<1	<1	1	<1	6						
			Silicoflagellates	-	<1	<1	1	1						
			800			702 cm		793 cm		883 cm		966 cm		1071 cm
Quartz and Feldspar	3	2				10	2	1	2					
Heavy minerals	-	<1				2	<1	-	<1					
Clay	5	11				25	15	7	15					
Volcanic glass	10	5				8	5	8	3					
Micro-Mn nodules	2	-				<1	-	-	-					
Diatoms	74	81				54	75	80	77					
Radiolarians	6	1				1	3	4	2					
Silicoflagellates	<1	<1				<1	<1	<1	<1					
1000		877				Bottom topography: gently sloping; within a narrow (6-7 km) basin 200-300 fm (366-549 m) relief.								
1200														

Logged by: MacKenzie, Hattner, Graves, Kaharoeddin

ISLAS ORCADAS PC 1176-41

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°04.9' S		CORR. DEPTH: 3773 M, 2063 FM.			
			LONGITUDE: 06°15.0' W		CORE LENGTH: 966 cm			
LITHOLOGIC DESCRIPTION								
25			0-8 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); a few scattered gravel (3 mm); 2 cm scoria between 5-7 cm; sharp contact.					
			smear slide:		3 cm			
			Quartz and Feldspar		1			
			Clay		4			
			Volcanic glass		2			
			Carbonate unspecified		<<1			
			Diatoms		88			
			Radiolarians		3			
			Sponge spicules		1			
			Silicoflagellates		1			
50		55	8-100 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); volcanic lapilli scattered throughout; interspersed volcanic ash laminae between 20-100 cm; slightly bioturbated between 8-60 cm; sharp contact.					
			smear slide:		40 cm			
			Quartz and Feldspar		4			
			Clay		35			
			Volcanic glass		2			
			Zeolites		<1			
			Carbonate unspecified		3			
			Diatoms		54			
			Radiolarians		2			
			Sponge spicules		<1			
Silicoflagellates		<<1						
75			100-125 cm: Diatomaceous ooze, light olive gray (5Y 6/1); scattered volcanic ash and lapilli; moderately bioturbated; sharp contact.					
			smear slide:		116 cm			
			Quartz and Feldspar		5			
			Clay		3			
			Volcanic glass		5			
			Carbonate unspecified		1			
			Diatoms		80			
			Radiolarians		5			
			Sponge spicules		<1			
			Silicoflagellates		1			
100			125-267 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); scattered volcanic ash and lapilli; slightly bioturbated; sharp contact.					
			smear slides:		140 cm		240 cm	
			Quartz and Feldspar		2		5	
			Clay		33		32	
			Volcanic glass		1		3	
			Carbonate unspecified		5		<1	
			Diatoms		56		56	
			Radiolarians		3		3	
			Sponge spicules		<1		1	
			Silicoflagellates		<<1		<<1	
150			267-304 cm: Diatomaceous, foraminiferal ooze, very pale orange (10YR 8/2); 2 cm layers of volcanic ash, rich in foraminifera, between 293-295 cm, 300- 302 cm; layer of diatomaceous mud between 295-297 cm; sharp, inclined contact.					
			smear slide:		290 cm			
			Quartz and Feldspar		3			
			Clay		3			
			Volcanic glass		4			
			Carbonate unspecified		29			
			Foraminifera		40			
			Diatoms		20			
			Radiolarians		1			
			Sponge spicules		<1			
175			Percent Carbonate (280-281 cm): 24.3					
			CONTINUED - NEXT PAGE					

Logged by: Kaharoddin, Eggers, Graves

Logged by: Kaharoeddin, Eggers, Graves

ISLAS ORCADAS PC 1176-41

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°04.9' S		CORR. DEPTH: 3773 M, 2063 FM.	
			LONGITUDE: 06°15.0' W		CORE LENGTH: 966 cm	
LITHOLOGIC DESCRIPTION						
350			CONTINUED			
		358	468-497 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); slightly oxidized along side of core; volcanic ash scattered throughout; 5 mm scoriae at 477 cm and 491 cm; ball of yellowish gray, diatomaceous ooze between 469-471 cm, and 483-485 cm; slightly bioturbated; layer of sandy, diatomaceous ooze between 495-497 cm; sharp contact.			
			smear slide:		490 cm	
			Quartz and Feldspar		10	
			Clay		28	
			Volcanic glass		20	
			Micro-Mn nodules		<1	
			Diatoms		40	
			Radiolarians		2	
			Silicoflagellates		<1	
375		376				
			497-536 cm: Foraminiferal-diatomaceous ooze, yellowish gray (5Y 7/2) and dark yellowish brown (10YR 4/2); slightly oxidized along side of core liner between 497-517 cm; moderately oxidized between 517-536 cm; increasing volcanic ash and foraminiferal content with depth; few 3 mm scoriae scattered throughout; moderately bioturbated between 497-517 cm; slightly bioturbated between 517-536 cm; gradational contact.			
		390	smear slide:		523 cm	
			Quartz and Feldspar		3	
			Clay		6	
			Volcanic glass		15	
			Micro-Mn nodules		1	
			Carbonate unspecified		10	
			Foraminifera		25	
			Diatoms		32	
			Radiolarians		8	
			Sponge spicules		<1	
			Silicoflagellates		<1	
400		398				
		405	Percent Carbonate (522-523 cm): 27.8			
			536-578 cm: Marly, calcareous ooze, light olive gray (5Y 5/2); moderately oxidized and stained along side of core liner between 536-555 cm; highly oxidized and stained between 555-578 cm; scoriae (to 4 mm) scattered throughout; 3 cm scoriae between 567-573 cm; 1 cm sedimentary clast (semi-indurated) between 575-576 cm; sharp contact.			
			smear slides:		537 cm	
			Quartz and Feldspar		4	
			Clay		32	
			Volcanic glass		5	
			Carbonate unspecified		8	
			Foraminifera		12	
			Calcareous nannos		<1	
			Diatoms		38	
			Radiolarians		1	
			Silicoflagellates		-	
425		429				
			Percent Carbonate (554-555 cm): 31.1			
			578-592 cm: Diatomaceous, gravelly sand, dark yellowish brown (10YR 4/2); heavily oxidized and stained; detrital fraction composed primarily of volcanic glass, scoriae and quartz, subrounded; highly disturbed; sharp contact.			
		492				
500						
		519				
525						
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Logged by: Kaharoeddin, Eggers, Graves

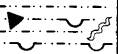
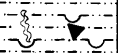
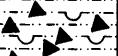

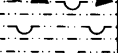
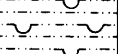
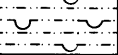


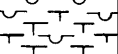
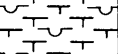


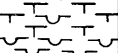
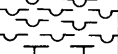
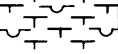
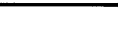














LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°04.9' S	CORR. DEPTH: 3773 M, 2063 FM,
			LONGITUDE: 06°15.0' W	CORE LENGTH: 966 cm
LITHOLOGIC DESCRIPTION				
525		528	CONTINUED	
			592-616 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2) and light olive gray (5Y 5/2); heavily oxidized and stained; zone of mud with high concentration of volcanic ash and a few lapilli between 603-610 cm; zone of diatomaceous ooze between 612-616 cm; slightly bioturbated between 599-616 cm; gradational contact.	
		546	smear slides:	600 cm 614 cm
550			Quartz and Feldspar	3 3
			Clay	55 10
			Volcanic glass	6 3
			Carbonate unspecified	- 5
			Foraminifera	- <1
			Diatoms	35 77
		563	Radiolarians	1 2
			Sponge spicules	<1 -
			Silicoflagellates	- <1
575		579	616-699 cm: Diatomaceous, foraminiferal ooze, dark yellowish brown (10YR 4/2); highly oxidized and stained between 616-640 cm; moderately oxidized between 640-670 cm; slightly oxidized along side of core liner between 670-682 cm; a few gravel (to 1 cm) scattered between 620-636 cm; zone of muddy, diatomaceous ooze between 654-665 cm; slightly bioturbated between 640-670 cm; volcanic ash content increases with depth; gradational contact.	
		592	smear slides:	644 cm 662 cm 684 cm
			Quartz and Feldspar	4 4 5
			Clay	23 40 15
600			Volcanic glass	8 10 18
			Carbonate unspecified	13 5 10
			Foraminifera	24 - 25
		606	Diatoms	23 41 23
			Radiolarians	4 <1 3
			Sponge spicules	<1 <1 1
			Silicoflagellates	1 <1 -
			Percent Carbonate (683-684 cm): 12.4	
625		623	699-725 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); slightly oxidized along side of core liner; volcanic ash scattered throughout; slightly bioturbated between 720-725 cm; gradational contact.	
			smear slide:	704 cm
			Quartz and Feldspar	10
			Clay	37
		640	Volcanic glass	15
			Carbonate unspecified	5
			Foraminifera	1
650			Diatoms	30
			Radiolarians	2
			Sponge spicules	<1
		657	725-750 cm: Diatomaceous, foraminiferal ooze, pale yellowish brown (10YR 6/2) and moderate yellowish brown (10YR 5/4); 5 mm and 25 mm rounded gravel between 739-743 cm; highly bioturbated between 725-734 cm; slightly bioturbated between 734-744 cm; gradational contact.	
			smear slide:	743 cm
675		675	Quartz and Feldspar	5
			Clay	10
			Volcanic glass	8
			Carbonate unspecified	20
			Foraminifera	30
			Diatoms	25
			Radiolarians	2
			Sponge spicules	<1
		691	Silicoflagellates	<<1
700			CONTINUED - NEXT PAGE	

ISLAS ORCADAS PC 1176-41

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°04.9' S	CORR. DEPTH: 3773 M, 2063 FM.
			LONGITUDE: 06°15.0' W	CORE LENGTH: 966 cm
LITHOLOGIC DESCRIPTION				
700			CONTINUED	
		709	750-793 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); volcanic ash scattered throughout; 6 mm and 8 mm gravel, with manganese-oxide coating, between 757-760 cm; increasing sand and volcanic ash content with depth, from 780 cm; slightly bioturbated; sharp contact.	
		715		
725			smear slides:	761 cm 780 cm
			Quartz and Feldspar	12 20
			Clay	38 20
			Volcanic glass	13 30
			Carbonate unspecified	1 <1
		734	Foraminifera	2 -
			Diatoms	30 24
			Radiolarians	4 4
			Sponge spicules	<1 1
			Silicoflagellates	<1 1
750		751	793-862 cm: Diatomaceous-foraminiferal ooze, dark yellowish brown (10YR 4/2); clay and foraminifera content varies; 1 cm rounded gravel between 804-805 cm; slightly bioturbated between 793-810 cm and 850-862 cm; slightly disturbed into chevron-like structures between 859-862 cm, due to process of extruding the core; sharp contact.	
			smear slides:	806 cm 831 cm
			Quartz and Feldspar	8 5
			Clay	7 52
			Volcanic glass	15 10
775			Carbonate unspecified	7 10
			Foraminifera	30 8
			Diatoms	28 15
			Radiolarians	5 <1
			Sponge spicules	<1 <1
			Silicoflagellates	<1 -
		770		
			Percent Carbonate (832-833 cm): 12.8	
800			862-915 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); a few 1-5 mm scoriae scattered between 870-888 cm; zone rich in scoriae (5-15 mm) between 888-898 cm; moderately bioturbated between 866-885 cm; sharp contact.	
		807	smear slide:	908 cm
			Quartz and Feldspar	4
			Clay	50
			Volcanic glass	6
			Carbonate unspecified	<1
			Diatoms	40
825			Radiolarians	<1
		825	Silicoflagellates	<<1
			915-966 cm: Diatomaceous, foraminiferal ooze, yellowish gray (5Y 7/2); zones rich in diatoms between 922-927 cm and 952-959 cm; slightly disturbed into chevron-like structures between 925-966 cm; due to process of extruding the core.	
		843		
850				
		865		
875				
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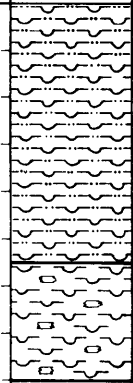
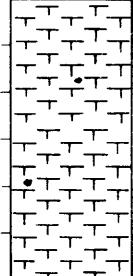
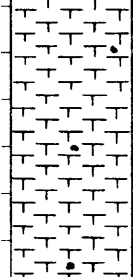
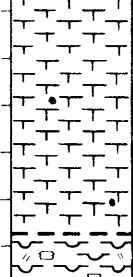
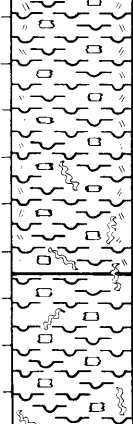
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Logged by: Kaharoeddin, Eggers, Graves

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°04.9' S	CORR. DEPTH: 3773 M, 2063 FM.
			LONGITUDE: 06°15.0' W	CORE LENGTH: 966 CM
LITHOLOGIC DESCRIPTION				
875			CONTINUED	
			<u>smear slide:</u> <u>945 cm</u>	
			Quartz and Feldspar 2	
			Clay 6	
			Volcanic glass 3	
900			Carbonate unspecified 15	
			Foraminifera 35	
			Calcareous nannos 1	
			Diatoms 33	
			Radiolarians 4	
			Sponge spicules <1	
			Silicoflagellates 1	
			<u>Percent Carbonate (944-945 cm): 37.1</u>	
			<u>Bottom topography:</u> moderately sloping; in high-relief topography of southwestern	
			flank of the African-Antarctic Ridge, approximately 500 km southwest of	
			Bouvet Island.	
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
925				
	</			

Logged by: Kaharoeddin, Eggers, Graves

ISLAS ORCADAS PC 1176-52

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 53°42.7' S		CORR. DEPTH: 3815 M, 2786 FM.																						
			LONGITUDE: 10°24.9' E		CORE LENGTH: 969 CM																						
LITHOLOGIC DESCRIPTION																											
20			0-22 cm: Muddy, diatomaceous ooze, pale yellowish brown (10YR 6/2); top 10 cm is muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); volcanic ash content increases with depth; sharp contact.																								
			<div><div>smear slide:</div><div>8 cm</div><table><tr><td>Quartz and Feldspar</td><td>10</td></tr><tr><td>Clay</td><td>30</td></tr><tr><td>Volcanic glass</td><td>7</td></tr><tr><td>Diatoms</td><td>45</td></tr><tr><td>Radiolarians</td><td>6</td></tr><tr><td>Sponge spicules</td><td><1</td></tr><tr><td>Silicoflagellates</td><td>2</td></tr></table></div>				Quartz and Feldspar	10	Clay	30	Volcanic glass	7	Diatoms	45	Radiolarians	6	Sponge spicules	<1	Silicoflagellates	2							
Quartz and Feldspar	10																										
Clay	30																										
Volcanic glass	7																										
Diatoms	45																										
Radiolarians	6																										
Sponge spicules	<1																										
Silicoflagellates	2																										
Percent Carbonate (7-9 cm): 2.2																											
40			22-32 cm: Calcareous-diatomaceous ooze, pale yellowish brown (10YR 6/2); volcanic ash scattered throughout; sharp contact.																								
			<div><div>smear slide:</div><div>27 cm</div><table><tr><td>Quartz and Feldspar</td><td>6</td></tr><tr><td>Clay</td><td>6</td></tr><tr><td>Volcanic glass</td><td>4</td></tr><tr><td>Carbonate unspecified</td><td>25</td></tr><tr><td>Foraminifera</td><td>10</td></tr><tr><td>Calcareous nannos</td><td>2</td></tr><tr><td>Diatoms</td><td>45</td></tr><tr><td>Radiolarians</td><td>2</td></tr><tr><td>Sponge spicules</td><td><1</td></tr><tr><td>Silicoflagellates</td><td><1</td></tr></table></div>				Quartz and Feldspar	6	Clay	6	Volcanic glass	4	Carbonate unspecified	25	Foraminifera	10	Calcareous nannos	2	Diatoms	45	Radiolarians	2	Sponge spicules	<1	Silicoflagellates	<1	
Quartz and Feldspar	6																										
Clay	6																										
Volcanic glass	4																										
Carbonate unspecified	25																										
Foraminifera	10																										
Calcareous nannos	2																										
Diatoms	45																										
Radiolarians	2																										
Sponge spicules	<1																										
Silicoflagellates	<1																										
Percent Carbonate (26-28 cm): 27.0																											
60		55	32-99 cm: Foraminiferal ooze, moderate yellowish brown (10YR 5/4); changes to yellowish gray (5Y 7/2) at 70 cm; some gravel (to 3 mm) scattered throughout; a sub-unit of higher mud and volcanic ash content at 32-70 cm; gradational contact.																								
			<div><div>smear slide:</div><div>88 cm</div><table><tr><td>Quartz and Feldspar</td><td>10</td></tr><tr><td>Clay</td><td>4</td></tr><tr><td>Volcanic glass</td><td>4</td></tr><tr><td>Carbonate unspecified</td><td>30</td></tr><tr><td>Foraminifera</td><td>35</td></tr><tr><td>Calcareous nannos</td><td>1</td></tr><tr><td>Diatoms</td><td>15</td></tr><tr><td>Radiolarians</td><td>1</td></tr><tr><td>Silicoflagellates</td><td><1</td></tr></table></div>				Quartz and Feldspar	10	Clay	4	Volcanic glass	4	Carbonate unspecified	30	Foraminifera	35	Calcareous nannos	1	Diatoms	15	Radiolarians	1	Silicoflagellates	<1			
Quartz and Feldspar	10																										
Clay	4																										
Volcanic glass	4																										
Carbonate unspecified	30																										
Foraminifera	35																										
Calcareous nannos	1																										
Diatoms	15																										
Radiolarians	1																										
Silicoflagellates	<1																										
Percent Carbonate (87-89 cm): 67.4																											
100			99-126 cm: Ash-bearing, calcareous, diatomaceous ooze, dark yellowish brown (10YR 4/2); bioturbated between 116-126 cm; bioturbated, sharp contact.																								
			<div><div>smear slide:</div><div>109 cm</div><table><tr><td>Quartz and Feldspar</td><td>5</td><td>Calcareous nannos</td><td><<1</td></tr><tr><td>Clay</td><td>23</td><td>Diatoms</td><td>32</td></tr><tr><td>Volcanic glass</td><td>15</td><td>Radiolarians</td><td>2</td></tr><tr><td>Zeolites</td><td><1</td><td>Sponge spicules</td><td><1</td></tr><tr><td>Carbonate unspecified</td><td>17</td><td>Silicoflagellates</td><td>1</td></tr><tr><td>Foraminifera</td><td>5</td><td></td><td></td></tr></table></div>				Quartz and Feldspar	5	Calcareous nannos	<<1	Clay	23	Diatoms	32	Volcanic glass	15	Radiolarians	2	Zeolites	<1	Sponge spicules	<1	Carbonate unspecified	17	Silicoflagellates	1	Foraminifera
Quartz and Feldspar	5	Calcareous nannos	<<1																								
Clay	23	Diatoms	32																								
Volcanic glass	15	Radiolarians	2																								
Zeolites	<1	Sponge spicules	<1																								
Carbonate unspecified	17	Silicoflagellates	1																								
Foraminifera	5																										
Percent Carbonate (108-110 cm): 12.2																											
140																											

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Logged by: Kaharoeddin, Hattner, Shepley, Jones, MacKenzie, Lemmings

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 53°42.7' S		CORR. DEPTH: 3815 M, 2086 FM.	
			LONGITUDE: 10°24.0' E		CORE LENGTH: 969 cm	
LITHOLOGIC DESCRIPTION						
140			CONTINUED			
			126-187 cm: Calcareous-diatomaceous ooze, yellowish gray (5Y 8/1); bioturbation from 126-154 cm; gradational contact.			
			<u>smear slide:</u> 157 cm			
			Quartz and Feldspar 2			
			Clay 8			
			Volcanic glass 4			
			Carbonate unspecified 30			
			Foraminifera 5			
			Calcareous nannos 1			
			Diatoms 47			
			Radiolarians 3			
			Silicoflagellates <1			
			<u>Percent Carbonate</u> (156-158 cm): 30.6			
160			187-206 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); unit moderately bioturbated throughout; volcanic ash scattered throughout; gradational, bioturbated contact.			
			206-224 cm: Calcareous, diatomaceous ooze, pale yellowish brown (10YR 6/2); volcanic ash scattered throughout; gradational contact.			
			<u>smear slide:</u> 214 cm			
			Quartz and Feldspar 5			
			Clay 25			
			Volcanic glass 5			
			Carbonate unspecified 10			
			Foraminifera 10			
			Diatoms 44			
			Radiolarians 1			
			Silicoflagellates <1			
			<u>Percent Carbonate</u> (213-215 cm): 17.6			
200			224-243 cm: Diatomaceous, foraminiferal ooze, yellowish gray (5Y 7/2); some scattered gravel (to 3 mm); bioturbation at 224-225 cm and 231-233 cm; volcanic ash scattered throughout; gradational contact.			
			<u>smear slide:</u> 237 cm			
			Quartz and Feldspar 4			
			Clay 5			
			Volcanic glass 4			
			Carbonate unspecified 30			
			Foraminifera 39			
			Calcareous nannos <1			
			Diatoms 15			
			Radiolarians 3			
			Sponge spicules <1			
			Silicoflagellates <1			
			<u>Percent Carbonate</u> (236-238 cm): 66.8			
220			243-266 cm: Ash-bearing, calcareous-diatomaceous ooze, dark yellowish brown (10YR 4/2); scattered gravel (to 1 cm); bioturbation throughout the unit; gradational contact.			
			<u>smear slide:</u> 257 cm			
			Quartz and Feldspar 7		Calcareous nannos <1	
			Clay 13		Diatoms 30	
			Volcanic glass 16		Radiolarians 5	
			Zeolites <1		Sponge spicules <1	
			Carbonate unspecified 20		Silicoflagellates 2	
			Foraminifera 7			
			<u>Percent Carbonate</u> (257-258 cm): 16.2			
260						
280						

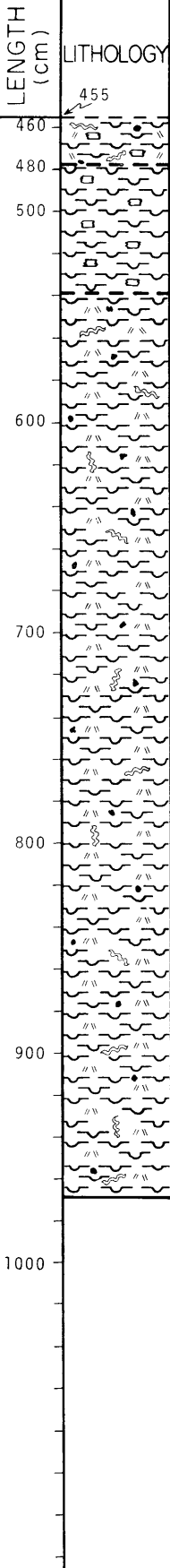
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ISLAS ORCADAS PC 1176-52

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 53°42.7' S		CORR. DEPTH: 3815 M, 2086 FM,	
			LONGITUDE: 10°24.0' E		CORE LENGTH: 969 CM	
LITHOLOGIC DESCRIPTION						
280			CONTINUED			
			266-380 cm: Foraminiferal ooze, color varies from pale yellowish brown (10YR 6/2) to yellowish gray (5Y 8/1); gravel (to 3 mm) scattered throughout; bioturbation in the entire unit; gradational contact. (340-359 cm is missing; probably lost during extrusion aboard ship.)			
300			<u>smear slide:</u>		<u>287 cm</u>	
			Quartz and Feldspar	5		
			Clay	20		
			Volcanic glass	2		
			Carbonate unspecified	25		
			Foraminifera	33		
			Calcareous nannos	1		
			Diatoms	12		
320			Radiolarians	2		
			Silicoflagellates	<1		
			<u>Percent Carbonate</u> (286-288 cm): 36.0			
			380-425 cm: Diatomaceous-foraminiferal ooze, dark yellowish brown (10YR 4/2); clay content varies along the unit; volcanic ash and gravel (to 1 cm) scattered throughout; bioturbation throughout; gradational contact.			
340			<u>smear slide:</u>		<u>390 cm</u>	
			Quartz and Feldspar	5		
			Clay	20		
			Volcanic glass	4		
			Carbonate unspecified	11		
			Foraminifera	25		
			Calcareous nannos	2		
			Diatoms	30		
			Radiolarians	3		
			Silicoflagellates	<1		
360		359	<u>Percent Carbonate</u> (390-391 cm): 21.1			
			425-455 cm: Foraminiferal ooze, yellowish gray (5Y 7/2); some gravel (to 1 cm) scattered throughout unit; bioturbation throughout; gradational contact.			
			NOTE: Smear-slide is biased toward the fine fraction (diatom and clay).			
380			<u>smear slide:</u>		<u>430 cm</u>	
			Quartz and Feldspar	5		
			Clay	10		
			Volcanic glass	5		
			Carbonate unspecified	23		
			Foraminifera	35		
			Calcareous nannos	<1		
			Diatoms	20		
			Radiolarians	2		
			Sponge spicules	<1		
400			Silicoflagellates	<1		
			<u>Percent Carbonate</u> (429-431 cm): 64.9			
			455-477 cm: Ash-bearing, calcareous, diatomaceous ooze, dark yellowish brown (10YR 4/2); gravel (to 4 mm) scattered throughout; bioturbated; gradational contact. NOTE: Some of coarse fraction (volcanic ash) is not included in the smear-slide; therefore, slide is biased toward fine fraction.			
420			<u>smear slide:</u>		<u>466 cm</u>	
			Quartz and Feldspar	8	Diatoms	45
			Clay	20	Radiolarians	3
			Volcanic glass	5	Sponge spicules	<1
			Carbonate unspecified	16	Silicoflagellates	<1
			Foraminifera	3		
440			<u>Percent Carbonate</u> (466-467 cm): 12.1			
455			CONTINUED - NEXT PAGE			

Logged by: Kaharoeddin, Hattner, Shepley, Jones, MacKenzie, Zemmels

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 53°42.7' S	CORR. DEPTH: 3815 M, 2086 FM.	
			LONGITUDE: 10°24.0' E	CORE LENGTH: 969 cm	
			LITHOLOGIC DESCRIPTION		
460		CONTINUED			
480		477-539 cm: Calcareous, diatomaceous ooze, yellowish gray (5Y 7/2); bioturbation throughout; gradational contact. NOTE: Most carbonate unspecified consists of broken fragments of foraminifera; slide biased toward diatom content.			
500		<u>smear slide:</u> <u>488 cm</u>			
		Quartz and Feldspar 2			
		Clay 4			
		Volcanic glass 1			
		Carbonate unspecified 15			
		Foraminifera 7			
		Diatoms 69			
		Radiolarians 2			
600		Sponge spicules <1			
		Silicoflagellates <1			
		<u>Percent Carbonate</u> (487-489 cm): 18.0			
		539-969 cm: Ash-bearing, diatomaceous ooze, color varies from dark yellowish brown (10YR 4/2) to pale yellowish brown (10YR 6/2); gravel (to 1 cm) scattered throughout; lower ash content between 564-573 cm and 841-885 cm; zone rich in iron oxides between 626-642 cm; a 2 cm iron-oxide concretion at 782-784 cm; bioturbated throughout. NOTE: Most of the coarse fraction, which includes volcanic glass, is not on the slides.			
700		<u>smear slides:</u> <u>546 cm</u> <u>570 cm</u> <u>694 cm</u> <u>811 cm</u> <u>910 cm</u> <u>958 cm</u>			
		Quartz and Feldspar 7 2 5 6 7 5			
		Clay 20 8 35 20 15 15			
		Volcanic glass 3 1 10 10 10 10			
		Zeolites - - - - - 1			
		Carbonate unspecified 3 - - - - -			
		Diatoms 64 85 46 55 61 62			
		Radiolarians 2 1 3 6 5 5			
		Sponge spicules - - <1 <1 1 1			
800		Silicoflagellates 1 3 1 3 1 1			
		<u>Percent Carbonate</u> (546-547 cm): 2.5			
	Bottom topography: gently sloping; approximately 400 km northeast of Bouvet Island. Core located on a 400 fm (732 m) rise, approximately 100 km southwest of an offset of the Antarctic-African Ridge crest.				
900					
1000					

ISLAS ORCADAS PC 1176-53

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 52°12.7' S	CORR. DEPTH: 3116 M, 1704 FM.
			LONGITUDE: 09°28.3' E	CORE LENGTH: 991 cm
LITHOLOGIC DESCRIPTION				
			0-18 cm: Diatomaceous ooze, very pale orange (10YR 8/2); slightly bioturbated between 0-10 cm; highly bioturbated between 10-18 cm; entire unit washed along side of core liner; sharp contact.	
			<u>smear slide:</u>	<u>11 cm</u>
			Quartz and Feldspar	<1
			Carbonate unspecified	5
			Diatoms	92
			Radiolarians	2
			Sponge spicules	<1
			Silicoflagellates	1
40			18-85 cm: Diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered throughout; zone of ooze enriched with foraminifera between 54-60 cm; ferromanganese oxide-stained ooze between 23-25 cm; 1 cm scoriae between 18-19 cm; zone of ooze poor in volcanic ash and mud between 62-66 cm, very pale orange (10YR 8/2); slightly bioturbated between 70-78 cm; entire unit washed along side of core liner; gradational contact.	
80			<u>smear slide:</u>	<u>35 cm</u>
			Quartz and Feldspar	4
			Clay	15
			Volcanic glass	7
			Carbonate unspecified	4
			Foraminifera	5
			Diatoms	62
			Radiolarians	3
			Sponge spicules	<1
			Silicoflagellates	<1
120		85	85-143 cm: Foraminiferal, diatomaceous ooze, very pale orange (10YR 8/2); higher foraminifera content than the overlying unit; rich in volcanic ash, lapilli (to 5 mm) scattered throughout; slightly bioturbated between 90-97 cm; entire unit washed along side of core liner; highly washed, mixed, and very disturbed between 106-128 cm; gradational contact.	
			<u>smear slide:</u>	<u>109 cm</u>
			Quartz and Feldspar	1
			Clay	<1
			Volcanic glass	4
160			Carbonate unspecified	5
			Foraminifera	20
			Diatoms	66
			Radiolarians	3
			Sponge spicules	<1
			Silicoflagellates	1
200			143-203 cm: Diatomaceous ooze, very pale orange (10YR 8/2); few lapilli scattered throughout; lower foraminifera content than the overlying and underlying unit; entire unit washed along side of core liner; gradational contact.	
			<u>smear slide:</u>	<u>174 cm</u>
			Quartz and Feldspar	1
			Clay	<1
			Volcanic glass	1
			Carbonate unspecified	7
			Foraminifera	5
			Diatoms	82
			Radiolarians	3
			Sponge spicules	<1
			Silicoflagellates	1
240			<u>Percent Carbonate (174-175 cm): 12.8</u>	
			203-236 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); rich in volcanic ash; lower foraminifera content than the underlying unit; washed along side of core liner between 203-208 cm and 215-228 cm; sharp, bioturbated contact.	
280				

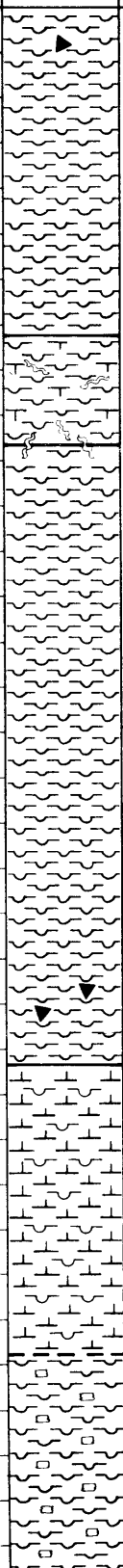

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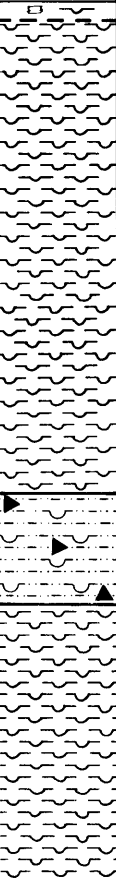

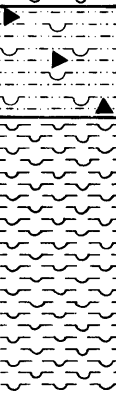
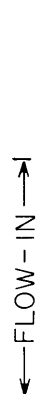


Logged by: Kaharoeddin, Graves, Jones, Smolko, Eggers

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 52°12.7' S	CORR. DEPTH: 3116 M, 1704 FM.
			LONGITUDE: 09°28.3' E	CORE LENGTH: 991 CM
LITHOLOGIC DESCRIPTION				
280			CONTINUED	
			236-260 cm: Foraminiferal-diatomaceous ooze, very pale orange (10YR 8/2); some volcanic ash scattered throughout; slightly bioturbated between 236-246 cm; gradational contact.	
			<u>smear slide:</u> <u>251 cm</u>	
			Quartz and Feldspar	<1
			Clay	5
			Volcanic glass	<1
			Carbonate unspecified	15
			Foraminifera	35
			Calcareous nannos	5
			Diatoms	36
320			Radiolarians	3
			Silicoflagellates	1
			<u>Percent Carbonate</u> (247-249 cm): 44.5	
360			260-267 cm: Diatomaceous ooze, very pale orange (10YR 8/2); some volcanic ash and lapilli scattered throughout; slightly bioturbated; sharp contact.	
			<u>smear slide:</u> <u>266 cm</u>	
			Quartz and Feldspar	2
			Volcanic glass	<1
			Carbonate unspecified	2
			Calcareous nannos	1
			Diatoms	91
			Radiolarians	2
			Silicoflagellates	2
400				
			<u>smear slides:</u>	<u>311 cm</u> <u>388 cm</u> <u>420 cm</u>
			Quartz and Feldspar	15 4 4
			Clay	5 5 1
			Volcanic glass	8 5 <1
			Carbonate unspecified	<<1 5 2
			Calcareous nannos	- 1 <<1
			Diatoms	71 77 90
			Radiolarians	1 2 2
			Silicoflagellates	<1 1 1
440			458-496 cm: Foraminiferal, diatomaceous ooze, very pale orange (10YR 8/2); few scattered volcanic ash between 463-467 cm, and 490-496 cm; 6 mm volcanic lapilli between 489-490 cm; entire unit slightly washed along side of core liner between 458-496 cm; gradational contact.	
			<u>smear slide:</u>	<u>471 cm</u>
			Quartz and Feldspar	<1
			Carbonate unspecified	10
			Foraminifera	25
			Calcareous nannos	5
			Diatoms	59
			Radiolarians	1
			Silicoflagellates	<1
480			<u>Percent Carbonate</u> (470-472 cm): 28.8	
			496-618 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); rich in volcanic ash throughout; 1.5 cm scoria between 565-567 cm; ferromanganese oxide stain between 524-526 cm; slightly washed along side of core liner between 540-567 cm; sharp contact.	
520			CONTINUED - NEXT PAGE	
560				

ISLAS ORCADAS PC 1176-53

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 52°12.7' S		CORR. DEPTH: 3116 M, 1704 FM,																													
			LONGITUDE: 09°28.3' E		CORE LENGTH: 991 cm																													
LITHOLOGIC DESCRIPTION																																		
560			CONTINUED																															
<table><tr><td><u>smear slides:</u></td><td><u>519 cm</u></td><td><u>569 cm</u></td></tr><tr><td>Quartz and Feldspar</td><td>4</td><td>4</td></tr><tr><td>Clay</td><td>3</td><td>1</td></tr><tr><td>Volcanic glass</td><td>6</td><td>4</td></tr><tr><td>Carbonate unspecified</td><td>1</td><td>2</td></tr><tr><td>Calcareous nannos</td><td>-</td><td>1</td></tr><tr><td>Diatoms</td><td>84</td><td>85</td></tr><tr><td>Radiolarians</td><td>2</td><td>3</td></tr><tr><td>Sponge spicules</td><td>-</td><td><1</td></tr><tr><td>Silicoflagellates</td><td><<1</td><td><1</td></tr></table>			<u>smear slides:</u>	<u>519 cm</u>	<u>569 cm</u>	Quartz and Feldspar	4	4	Clay	3	1	Volcanic glass	6	4	Carbonate unspecified	1	2	Calcareous nannos	-	1	Diatoms	84	85	Radiolarians	2	3	Sponge spicules	-	<1	Silicoflagellates	<<1	<1		
<u>smear slides:</u>			<u>519 cm</u>	<u>569 cm</u>																														
Quartz and Feldspar			4	4																														
Clay			3	1																														
Volcanic glass			6	4																														
Carbonate unspecified			1	2																														
Calcareous nannos			-	1																														
Diatoms			84	85																														
Radiolarians			2	3																														
Sponge spicules			-	<1																														
Silicoflagellates			<<1	<1																														
618-637 cm: Foraminiferal, diatomaceous ooze, very pale orange (10YR 8/2); slightly bioturbated; sharp, bioturbated contact.																																		
<table><tr><td><u>smear slide:</u></td><td><u>628 cm</u></td></tr><tr><td>Quartz and Feldspar</td><td>1</td></tr><tr><td>Clay</td><td><1</td></tr><tr><td>Volcanic glass</td><td>1</td></tr><tr><td>Micro-Mn nodules</td><td><1</td></tr><tr><td>Carbonate unspecified</td><td>5</td></tr><tr><td>Foraminifera</td><td>30</td></tr><tr><td>Calcareous nannos</td><td><1</td></tr><tr><td>Diatoms</td><td>60</td></tr><tr><td>Radiolarians</td><td>3</td></tr><tr><td>Silicoflagellates</td><td><1</td></tr></table>			<u>smear slide:</u>	<u>628 cm</u>	Quartz and Feldspar	1	Clay	<1	Volcanic glass	1	Micro-Mn nodules	<1	Carbonate unspecified	5	Foraminifera	30	Calcareous nannos	<1	Diatoms	60	Radiolarians	3	Silicoflagellates	<1										
<u>smear slide:</u>			<u>628 cm</u>																															
Quartz and Feldspar			1																															
Clay			<1																															
Volcanic glass			1																															
Micro-Mn nodules			<1																															
Carbonate unspecified			5																															
Foraminifera			30																															
Calcareous nannos			<1																															
Diatoms			60																															
Radiolarians			3																															
Silicoflagellates	<1																																	
Percent Carbonate (629-631 cm): 27.6																																		
637-747 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); rich in volcanic ash throughout; ferromanganese-oxide stain between 640-645 cm, 660-662 cm, 670-672 cm, and 703-704 cm; volcanic lapilli (to 15 mm) between 731-739 cm; sharp contact.																																		
<table><tr><td><u>smear slides:</u></td><td><u>668 cm</u></td><td><u>720 cm</u></td></tr><tr><td>Quartz and Feldspar</td><td>8</td><td>8</td></tr><tr><td>Clay</td><td>15</td><td>3</td></tr><tr><td>Volcanic glass</td><td>8</td><td>5</td></tr><tr><td>Micro-Mn nodules</td><td>1</td><td>-</td></tr><tr><td>Carbonate unspecified</td><td><<1</td><td>4</td></tr><tr><td>Calcareous nannos</td><td>-</td><td>1</td></tr><tr><td>Diatoms</td><td>65</td><td>75</td></tr><tr><td>Radiolarians</td><td>3</td><td>4</td></tr><tr><td>Silicoflagellates</td><td>-</td><td><1</td></tr></table>			<u>smear slides:</u>	<u>668 cm</u>	<u>720 cm</u>	Quartz and Feldspar	8	8	Clay	15	3	Volcanic glass	8	5	Micro-Mn nodules	1	-	Carbonate unspecified	<<1	4	Calcareous nannos	-	1	Diatoms	65	75	Radiolarians	3	4	Silicoflagellates	-	<1		
<u>smear slides:</u>	<u>668 cm</u>	<u>720 cm</u>																																
Quartz and Feldspar	8	8																																
Clay	15	3																																
Volcanic glass	8	5																																
Micro-Mn nodules	1	-																																
Carbonate unspecified	<<1	4																																
Calcareous nannos	-	1																																
Diatoms	65	75																																
Radiolarians	3	4																																
Silicoflagellates	-	<1																																
747-798 cm: Diatomaceous, nannofossil ooze, white (N9); gradational contact.																																		
<table><tr><td><u>smear slide:</u></td><td><u>772 cm</u></td></tr><tr><td>Quartz and Feldspar</td><td>1</td></tr><tr><td>Foraminifera</td><td>10</td></tr><tr><td>Calcareous nannos</td><td>53</td></tr><tr><td>Diatoms</td><td>35</td></tr><tr><td>Radiolarians</td><td>1</td></tr><tr><td>Silicoflagellates</td><td><1</td></tr></table>			<u>smear slide:</u>	<u>772 cm</u>	Quartz and Feldspar	1	Foraminifera	10	Calcareous nannos	53	Diatoms	35	Radiolarians	1	Silicoflagellates	<1																		
<u>smear slide:</u>	<u>772 cm</u>																																	
Quartz and Feldspar	1																																	
Foraminifera	10																																	
Calcareous nannos	53																																	
Diatoms	35																																	
Radiolarians	1																																	
Silicoflagellates	<1																																	
Percent Carbonate (770-772 cm): 76.5																																		
798-843 cm: Calcareous, diatomaceous ooze, very pale orange (10YR 8/2); some volcanic ash washed in from side of core; gradational contact.																																		
<table><tr><td><u>smear slide:</u></td><td><u>818 cm</u></td><td></td></tr><tr><td>Quartz and Feldspar</td><td>4</td><td>Calcareous nannos 5</td></tr><tr><td>Clay</td><td><1</td><td>Diatoms 77</td></tr><tr><td>Volcanic glass</td><td><1</td><td>Radiolarians 4</td></tr><tr><td>Carbonate unspecified</td><td>6</td><td>Silicoflagellates <1</td></tr><tr><td>Foraminifera</td><td>4</td><td></td></tr></table>			<u>smear slide:</u>	<u>818 cm</u>		Quartz and Feldspar	4	Calcareous nannos 5	Clay	<1	Diatoms 77	Volcanic glass	<1	Radiolarians 4	Carbonate unspecified	6	Silicoflagellates <1	Foraminifera	4															
<u>smear slide:</u>	<u>818 cm</u>																																	
Quartz and Feldspar	4	Calcareous nannos 5																																
Clay	<1	Diatoms 77																																
Volcanic glass	<1	Radiolarians 4																																
Carbonate unspecified	6	Silicoflagellates <1																																
Foraminifera	4																																	
840			CONTINUED - NEXT PAGE																															

Logged by: Kaharoeddin, Graves, Jones, Smolko, Eggers

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 52°12.7' S	CORR. DEPTH: 3116 M, 1704 FM,	
			LONGITUDE: 09°28.3' E	CORE LENGTH: 991 CM	
LITHOLOGIC DESCRIPTION					
840			CONTINUED		
			843-924 cm: Diatomaceous ooze, moderate orange pink (5YR 8/4); micromanganese nodules and ferromanganese-oxide stain between 843-854, 859-863, 866-873, and 905-911 cm; few volcanic ash scattered between 918-924 cm; sharp contact.		
			<u>smear slides:</u>	<u>850 cm</u>	<u>890 cm</u>
880			Quartz and Feldspar	3	<1
			Volcanic glass	3	-
			Carbonate unspecified	7	2
			Foraminifera	-	3
			Calcareous nannos	5	<1
			Diatoms	78	93
			Radiolarians	2	2
			Silicoflagellates	2	<1
			<u>Percent Carbonate</u> (890-891 cm): 3.5		
920			924-943 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); rich in volcanic ash; few lapilli scattered throughout; sharp contact.		
			<u>smear slide:</u>	<u>931 cm</u>	
			Quartz and Feldspar	3	
			Clay	50	
			Volcanic glass	2	
			Carbonate unspecified	<1	
			Diatoms	44	
			Radiolarians	1	
			Silicoflagellates	<1	
960			943-991 cm: Diatomaceous ooze, very pale orange (10YR 8/2); gradational change to flow-in at 950 cm; flow-in between 950-991 cm.		
			<u>smear slide:</u>	<u>945 cm</u>	
			Quartz and Feldspar	2	
			Volcanic glass	2	
			Carbonate unspecified	5	
			Foraminifera	8	
			Diatoms	78	
			Radiolarians	4	
			Silicoflagellates	1	
1000			Bottom topography: gently sloping; on apex of a 300 fm (549 m) rise, approximately 140 km from the Antarctic-African ridge crest, and 475 km northeast of Bouvet Island.		

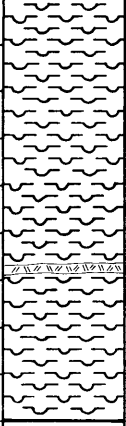

ISLAS ORCADAS PC 1176-54

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 53°07.1' S	CORR. DEPTH: 2502 M, 1368 FM.	
			LONGITUDE: 07°59.2' E	CORE LENGTH: 440 cm	
LITHOLOGIC DESCRIPTION					
			0-7 cm: Diatomaceous ooze, grayish orange (10YR 7/4); sharp contact.		
			smear slide:	4 cm	
			Quartz and Feldspar	1	
			Heavy minerals	<1	
			Clay	1	
			Volcanic glass	3	
			Carbonate unspecified	1	
			Foraminifera	<1	
			Diatoms	94	
			Radiolarians	<1	
			Silicoflagellates	<1	
			7-27 cm: Ash-bearing, diatomaceous ooze, olive gray (5Y 4/1); sharp contact.		
			NOTE: Most of coarse fraction is not on the smear-slide.		
			smear slide:	18 cm	
			Quartz and Feldspar	15	
			Heavy minerals	<1	
			Clay	5	
			Volcanic glass	13	
			Carbonate unspecified	2	
			Foraminifera	<1	
			Diatoms	55	
			Radiolarians	9	
			Silicoflagellates	<1	
		137	27-74 cm: Calcareous, diatomaceous ooze, very pale orange (10YR 8/2); partially washed (disturbed) between 27-50 cm; sharp contact.		
			smear slide:	49 cm	
			Quartz and Feldspar	1	
			Clay	10	
			Volcanic glass	4	
			Carbonate unspecified	20	
			Foraminifera	7	
			Diatoms	54	
			Radiolarians	3	
			Silicoflagellates	1	
			Percent Carbonate (43-45 cm): 10.9		
			74-183 cm: Ash-bearing, diatomaceous ooze, olive gray (5Y 4/1); pumice (2 cm) at 144-146 cm; very fine to fine volcanic ash bed at 158-166 cm; gradational contact. NOTE: Most of the coarse fraction is not on the smear-slides.		
			smear slides:	112 cm	162 cm
			Quartz and Feldspar	3	3
			Heavy minerals	-	2
			Clay	2	1
			Volcanic glass	13	16
			Zeolites	1	-
			Carbonate unspecified	10	3
			Foraminifera	3	2
			Diatoms	65	72
			Radiolarians	3	<1
			Sponge spicules	-	<1
			Silicoflagellates	<1	<1
			Percent Carbonate (112-113 cm): 2.2		(162-163 cm): 3.0
			183-245 cm: Diatomaceous ooze, pale yellowish orange (10YR 8/6); large sediment clast with a volcanic ash core at 202-209 cm; bioturbation between 183-198 cm; gradational contact.		
350					

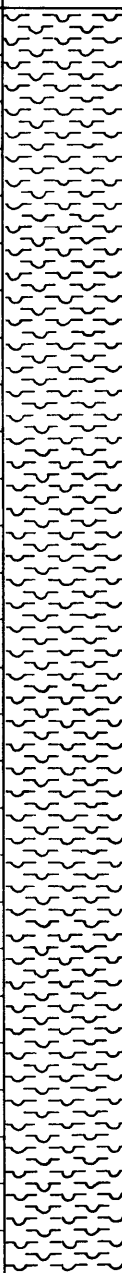
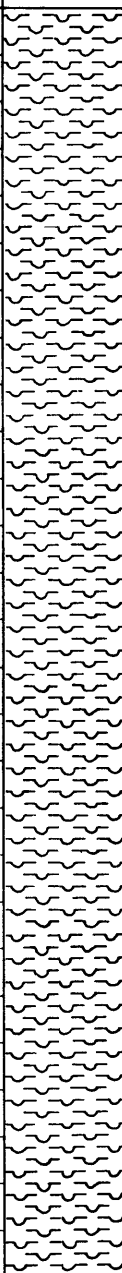
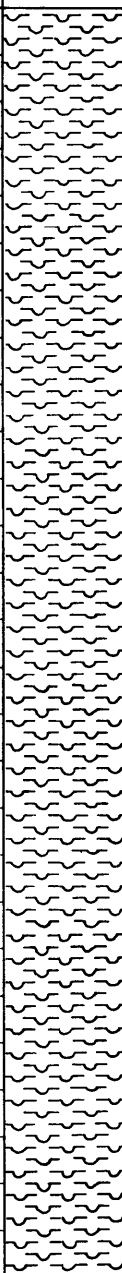
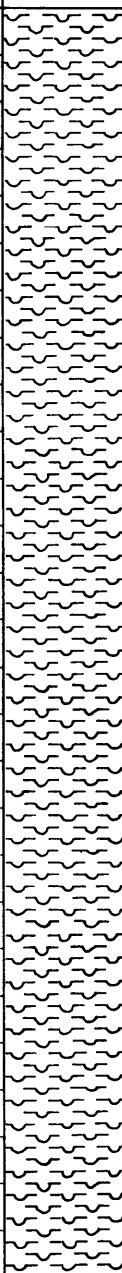
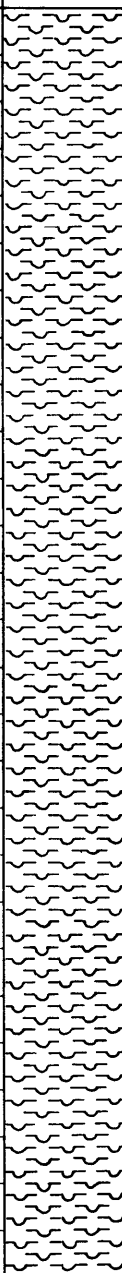
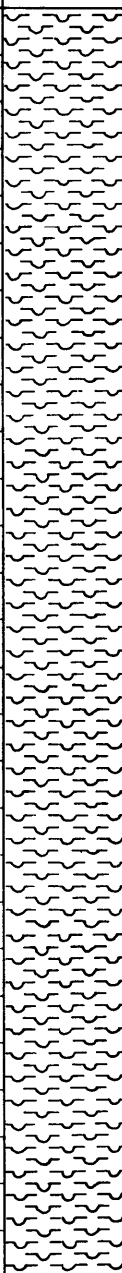
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Logged by: MacKenzie, Kaharoeddin, Hattner

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 53°07.1' S		CORR. DEPTH: 2502 m, 1368 fm.		
			LONGITUDE: 07°59.2' E		CORE LENGTH: 440 cm		
LITHOLOGIC DESCRIPTION							
350			CONTINUED				
			<u>smear slide:</u>		<u>217 cm</u>		
			Quartz and Feldspar	<1			
			Clay	1			
			Volcanic glass	3			
			Carbonate unspecified	1			
400			Diatoms	89			
			Radiolarians	5			
			Silicoflagellates	<1			
			<u>Percent Carbonate</u> (226-227 cm): 2.8				
	245-299 cm: Ash-bearing, calcareous-diatomaceous ooze, light olive gray (5Y 5/2); gradational contact. Most of coarse fraction is not on the smear-slide.						
450			<u>smear slide:</u>		<u>256 cm</u>		
			Quartz and Feldspar	2			
			Heavy minerals	<1			
			Clay	5			
			Volcanic glass	10			
			Carbonate unspecified	25			
			Foraminifera	13			
			Diatoms	39			
			Radiolarians	5			
			Sponge spicules	<1			
			Silicoflagellates	<1			
			<u>Percent Carbonate</u> (256-257 cm): 1.8				
			299-440 cm: Diatomaceous ooze, very pale orange (10YR 8/2) to grayish orange (10YR 7/4); sediment clast at 331-334 cm; zone rich in volcanic ash between 406-408 cm; bioturbation between 299-303 cm; higher mud content in upper part of unit.				
			<u>smear slides:</u>		<u>377 cm</u>	<u>436 cm</u>	
			Quartz and Feldspar	<1		<1	
			Clay	25		5	
			Volcanic glass	2		2	
			Carbonate unspecified	10		10	
			Foraminifera	6		4	
			Calcareous nannos	1		<1	
			Diatoms	48		71	
			Radiolarians	7		8	
			Silicoflagellates	<1		<1	
			<u>Percent Carbonate</u> (328-329 cm): 18.8		(436-437 cm): 7.8		
			Bottom topography: moderately sloping; at the center of a 200-300 fm (366-549 m) rise, approximately 210 km northeast of Bouvet Island.				

ISLAS ORCADAS PC 1176-55

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 53°22.9' S		CORR. DEPTH: 2926 M, 1600 FM,	
			LONGITUDE: 06°39.6' E		CORE LENGTH: 1181 CM	
LITHOLOGIC DESCRIPTION						
200			0-1181 cm: Diatomaceous ooze, light olive (10Y 5/4) with gradational change at 1065 cm to yellowish gray (5Y 7/2).			
			<u>smear slides:</u>			
			<u>2 cm</u>			
			<u>520 cm</u>			
			<u>1175 cm</u>			
			Quartz and Feldspar 1 <1 7			
			Clay 1 <1 10			
			Volcanic glass 1 <1 2			
			Micro-Mn nodules 1 <1 4			
			Zeolites - - <1			
			Carbonate unspecified 5 2 1			
			Foraminifera 1 <1 <1			
			Calcareous nannos <<1 - -			
			Diatoms 88 96 69			
			Radiolarians 1 <1 6			
Sponge spicules - - 1						
Silicoflagellates 1 1 <1						
Bottom topography: gently sloping; on southern flank of a 400-500 fm (732-914 m) rise, approximately 250 km northeast of Bouvet Island.						
400						
600						
800						
1000						
			1200			

Logged by: Zemmel, Muza

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 57°13.8' S	CORR. DEPTH: 5479 M, 2996 FM,	
			LONGITUDE: 08°12.1' E	CORE LENGTH: 1756 cm	
LITHOLOGIC DESCRIPTION					
			0-47 cm: Pelagic clay, dark yellowish brown (10YR 4/2); top 10 cm slightly disturbed; unit is watery; gradational contact.		
			<u>smear slide:</u>	<u>16 cm</u>	
			Quartz and Feldspar	2	
			Heavy minerals	1	
			Clay	68	
			Volcanic glass	3	
			Diatoms	25	
			Radiolarians	1	
			Sponge spicules	<1	
			Silicoflagellates	<1	
			47-70 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); bioturbated, gradational contact.		
			<u>smear slide:</u>	<u>58 cm</u>	
			Quartz and Feldspar	1	
			Clay	3	
			Volcanic glass	1	
			Diatoms	89	
			Radiolarians	1	
			Sponge spicules	<1	
			Silicoflagellates	5	
			70-360 cm: Pelagic clay, dark yellowish brown (10YR 4/2); sedimentary clast (1.5 cm) at 116 cm; 1 cm pumice at 222 cm; unit is slightly disturbed (watery) between 290-310 cm; gradational contact.		
			<u>smear slides:</u>	<u>88 cm</u>	<u>217 cm</u>
			Quartz and Feldspar	2	1
			Clay	74	66
			Volcanic glass	4	3
			Diatoms	20	30
			Radiolarians	<1	<1
			Sponge spicules	<1	<1
			Silicoflagellates	-	<1
			360-419 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); zones rich in micromanganese nodules between 376-388 cm and 405-419 cm; bioturbations between 396 to 405 cm; gradational contact.		
			<u>smear slides:</u>	<u>368 cm</u>	<u>403 cm</u>
			Quartz and Feldspar	4	4
			Clay	23	34
			Volcanic glass	2	4
			Diatoms	70	55
			Radiolarians	1	2
			Sponge spicules	<1	-
			Silicoflagellates	<1	1
			419-458 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); bioturbated throughout; gradational contact.		
			<u>smear slide:</u>	<u>437 cm</u>	
			Quartz and Feldspar	2	
			Clay	8	
			Volcanic glass	3	
			Diatoms	83	
			Radiolarians	3	
			Sponge spicules	<1	
			Silicoflagellates	1	
			CONTINUED - NEXT PAGE		

Logged by: Kaharoeddin, Shepley, Graves, Hattner, Zemmels



ISLAS ORCADAS PC 1176-64

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 57°13.8' S		CORR. DEPTH: 5479 M, 2996 FM.				
			LONGITUDE: 08°12.1' E		CORE LENGTH: 1756 CM				
LITHOLOGIC DESCRIPTION									
700			CONTINUED						
			458-648 cm: Pelagic clay, dark yellowish brown (10YR 4/2); 542-574 cm interval is very disturbed (fell out of liner during extrusion aboard ship); zone rich in ferromanganese micronodules and stains between 474-478 cm; gradational contact.						
		877	smear slides:	469 cm	530 cm	554 cm	614 cm		
			Quartz and Feldspar	2	1	2	2		
			Clay	71	71	55	69		
			Volcanic glass	5	-	2	2		
			Diatoms	20	25	40	25		
			Radiolarians	2	3	1	2		
			Sponge spicules	<1	<1	<1	-		
			Silicoflagellates	<1	-	-	-		
			648-692 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); gradational, and slightly bioturbated, contact.						
			smear slide:	683 cm					
		1148	Quartz and Feldspar	2		Diatoms	72		
			Clay	20		Radiolarians	5		
			Volcanic glass	1		Silicoflagellates	<1		
			692-756 cm: Pelagic clay, dark yellowish brown (10YR 4/2); slightly bioturbated; gradational contact.						
			smear slide:	731 cm					
			Quartz and Feldspar	1		Radiolarians	3		
			Clay	65		Sponge spicules	<1		
			Volcanic glass	1		Silicoflagellates	<1		
			Diatoms	30					
			756-783 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); bioturbation throughout; sharp contact.						
		1451	smear slide:	769 cm					
			Quartz and Feldspar	1		Diatoms	75		
			Clay	17		Radiolarians	5		
			Volcanic glass	1		Silicoflagellates	1		
			783-1756 cm: Pelagic clay, color varies from dark yellowish brown (10YR 4/2) to moderate yellowish brown (10YR 5/4) to yellowish gray (5Y 7/2); 2 cm gravel at 1485 cm and 1 cm gravel at 1514 cm; slightly bioturbated between 783-1307 cm; vertical mottling between 1390-1440 cm.						
			smear slides:	835 cm	947 cm	1072 cm	1170 cm		
			Quartz and Feldspar	3	3	1	1		
			Clay	74	73	81	88		
			Volcanic glass	1	3	3	<1		
			Zeolites	<1	-	-	-		
			Diatoms	20	20	15	10		
			Radiolarians	2	1	<1	1		
			Sponge spicules	<1	<1	<1	-		
			Silicoflagellates	-	-	-	-		
			smear slides:	1304 cm	1375 cm	1431 cm	1508 cm	1610 cm	1753 cm
			Quartz and Feldspar	2	4	1	3	3	2
			Clay	88	63	65	88	92	90
			Volcanic glass	<1	5	2	-	1	1
			Micro-Mn nodules	1	-	-	2	2	1
			Diatoms	8	25	30	7	2	5
			Radiolarians	1	2	2	<1	<1	1
			Sponge spicules	<1	-	-	<1	-	-
			Silicoflagellates	<1	1	<1	-	-	<1
Bottom topography: fairly flat sediment pocket between two abyssal hills, 80-100 fms. (146-183 m) in relief.									

Logged by: Kaharoeddin, Shepley, Graves, Hattner, Zemmels

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 57°55.3' S		CORR. DEPTH: 4513 M, 2468 FM	
			LONGITUDE: 08°59.0' E		CORE LENGTH: 1161 cm.	
LITHOLOGIC DESCRIPTION						
			0-31 cm: Pelagic clay, dark yellowish brown (10YR 4/2); bottom of unit is bioturbated; gradational contact.			
			<u>smear slide:</u>		<u>5 cm</u>	
			Quartz and Feldspar		15	
			Clay		65	
			Volcanic glass		15	
			Calcareous nannos		<1	
			Diatoms		5	
			Radiolarians		<1	
			Silicoflagellates		<1	
100			31-60 cm: Diatomaceous mud, moderate yellowish brown (10YR 5/4); slightly bioturbated; sharp contact.			
			<u>smear slide:</u>		<u>53 cm</u>	
			Quartz and Feldspar		2	
			Clay		54	
			Volcanic glass		2	
			Calcareous nannos		<1	
			Diatoms		34	
			Radiolarians		7	
			Silicoflagellates		1	
200			60-160 cm: Radiolarian, diatomaceous ooze, yellowish gray (5Y 7/2); radiolarian content decreases with depth; gradational contact.			
			<u>smear slides:</u>		<u>69 cm</u>	
			Quartz and Feldspar		4	
			Clay		5	
			Diatoms		75	
			Radiolarians		16	
			Sponge spicules		<1	
			Silicoflagellates		<1	
300					<u>133 cm</u>	
			Quartz and Feldspar		2	
			Clay		25	
			Diatoms		61	
			Radiolarians		10	
			Sponge spicules		<1	
			Silicoflagellates		2	
400			160-418 cm: Diatomaceous mud, moderate yellowish brown (10YR 5/4); bioturbations filled with diatomaceous ooze between 315-418 cm; gradational contact.			
			<u>smear slides:</u>		<u>237 cm</u>	
			Quartz and Feldspar		1	
			Heavy minerals		1	
			Clay		50	
			Volcanic glass		7	
			Diatoms		33	
			Radiolarians		7	
			Sponge spicules		<1	
			Silicoflagellates		1	
500					<u>336 cm</u>	
			Quartz and Feldspar		1	
			Heavy minerals		-	
			Clay		10	
			Volcanic glass		-	
			Diatoms		76	
			Radiolarians		9	
			Sponge spicules		-	
			Silicoflagellates		4	
600					<u>355 cm</u>	
			Quartz and Feldspar		4	
			Heavy minerals		-	
			Clay		62	
			Volcanic glass		1	
			Diatoms		25	
			Radiolarians		5	
			Sponge spicules		<1	
			Silicoflagellates		3	
700			418-454 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); sharp contact.			
			<u>smear slide:</u>		<u>443 cm</u>	
			Quartz and Feldspar		2	
			Clay		5	
			Volcanic glass		1	
			Diatoms		80	
			Radiolarians		10	
			Silicoflagellates		2	
800			454-990 cm: Pelagic clay, moderate yellowish brown (10YR 5/4), grading to light brown (5YR 6/4); micromanganese nodules scattered throughout; higher percentage of diatoms in top part of unit; slightly bioturbated toward top of unit; gradational contact.			
875						

252

555

857



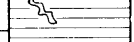
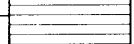
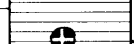
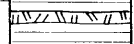
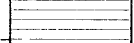
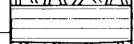

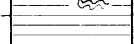
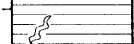
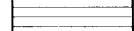
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ISLAS ORCADAS PC 1176-66

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 57°55.3' S CORR. DEPTH: 4513 M, 2468 FM. LONGITUDE: 08°59.0' E CORE LENGTH: 1161 cm			
			LITHOLOGIC DESCRIPTION			
875			CONTINUED			
900						
			<u>smear slides:</u>	<u>467 cm</u>	<u>589 cm</u>	<u>824 cm</u>
			Quartz and Feldspar	2	3	2
			Clay	65	71	86
			Volcanic glass	4	5	4
			Diatoms	16	12	5
1000			Radiolarians	9	7	2
			Sponge spicules	<1	<1	1
			Silicoflagellates	4	2	<1
			990-1161 cm: Diatomaceous mud, moderate yellowish brown (10YR 5/4); a marked increase in diatoms from 1107 cm; micromanganese nodules scattered throughout; slightly bioturbated.			
1100			<u>smear slides:</u>	<u>1008 cm</u>	<u>1148 cm</u>	
			Quartz and Feldspar	1	1	
			Clay	56	40	
			Volcanic glass	3	3	
			Diatoms	35	45	
			Radiolarians	4	7	
			Sponge spicules	<1	<1	
			Silicoflagellates	1	4	
			Bottom topography: gently sloping; at apex of a broad abyssal rise, 400-500 fms. (732-914 m) relief.			

Logged by: Hattner, Kaharoeddin, Jones

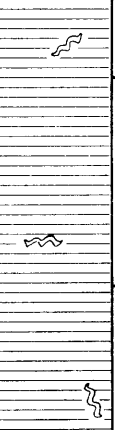

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 57°02.6' S	CORR. DEPTH: 5274 M, 2884 FM.
			LONGITUDE: 09°14.9' E	CORE LENGTH: 1773 CM
LITHOLOGIC DESCRIPTION				
			0-57 cm: Pelagic clay, dark yellowish brown (10YR 4/2); lens of diatomaceous ooze at 0-3 cm, with sharp, dipping contact; volcanic ash scattered throughout; gradational contact.	
			<u>smear slide:</u>	<u>40 cm</u>
			Quartz and Feldspar	2
			Clay	69
			Volcanic glass	2
			Diatoms	25
			Radiolarians	2
			Sponge spicules	<1
200		S		
		291		
			57-77 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); moderately bioturbated; micromanganese nodules scattered throughout; gradational contact.	
400			77-122 cm: Pelagic clay, dark yellowish brown (10YR 4/2); lamina of volcanic ash at 86 cm; volcanic ash scattered throughout; bioturbation between 90-94 cm; gradational contact.	
		S	122-147 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); slightly bioturbated; slightly stained with ferromanganese oxide; volcanic ash scattered throughout; sharp contact.	
600		S	147-203 cm: Pelagic clay, dark yellowish brown (10YR 4/2); zones enriched in volcanic ash between 170-180 cm and 192-203 cm; slightly bioturbated; sharp, dipping contact.	
			203-225 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); slightly stained with ferromanganese oxide; moderately bioturbated; gradational contact.	
			<u>smear slide:</u>	<u>213 cm</u>
			Quartz and Feldspar	2
			Clay	10
			Volcanic glass	<1
			Diatoms	85
			Radiolarians	2
			Sponge spicules	<1
			Silicoflagellates	1
800				
		887		
		S	225-1773 cm: Pelagic clay, dark yellowish brown (10YR 4/2), gradational change at 940 cm to yellowish gray (5Y 7/2); volcanic ash scattered throughout; slightly stained with ferromanganese oxide; sedimentary clast of diatomaceous ooze between 585-587 cm; volcanic ash laminae at 693 cm, 934 cm, 972 cm and 975 cm; slightly bioturbated throughout; slightly disturbed between 269-277 cm, 568-570 cm, 613-619 cm and 1046-1053 cm; flow-in between 1644-1773 cm.	
1000				
		1164		
1200				
				
1400				

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Logged by: Kaharoeddin, Eggers, Graves, Hattner

ISLAS ORCADAS PC 1176-67

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 57°02.6' S		CORR. DEPTH: 5274 M, 2884 FM.				
			LONGITUDE: 09°14.9' E		CORE LENGTH: 1773 cm				
LITHOLOGIC DESCRIPTION									
1400		1468	CONTINUED						
			smear slides:	420 cm	720 cm	1020 cm	1120 cm	1340 cm	1640 cm
			Quartz and Feldspar	2	2	3	2	3	3
			Clay	84	74	85	91	91	86
			Volcanic glass	3	4	2	1	2	1
			Micro-Mn nodules	-	-	-	-	<1	<1
1600			Zeolites	<1	<1	-	-	-	-
			Carbonate unspecified	<1	<1	<1	1	<1	<1
			Foraminifera	<<1	-	-	-	-	-
			Diatoms	10	20	10	5	4	10
	Radiolarians	1	<1	<1	-	-	<1		
	Sponge spicules	<1	-	<1	<1	<1	<1		
	Silicoflagellates	-	-	<1	-	-	-		
		FLOW-IN	Bottom topography: very gently sloping; sediment pond between abyssal hills.						
1800									

Logged by: Kaharoeddin, Eggers, Graves, Hattner

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 56°11.2' S		CORR. DEPTH: 4830 M, 2641 FM.			
			LONGITUDE: 09°35.3' E		CORE LENGTH: 1767 cm			
LITHOLOGIC DESCRIPTION								
100		13	0-69 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); gravel (to 5 mm) at 20 cm; gravel (to 1 cm) at 33 cm; slightly bioturbated from 24-63 cm; gradational contact.					
			<u>smear slides:</u>					
			<u>7 cm</u>		<u>63 cm</u>			
			Quartz and Feldspar		3	2		
			Heavy minerals		<1	-		
			Clay		48	50		
			Volcanic glass		11	7		
			Zeolites		<1	<1		
			Foraminifera		-	<1		
			Diatoms		35	40		
200			Radiolarians		2	1		
			Sponge spicules		<1	<1		
			Silicoflagellates		1	<1		
			69-108 cm: Radiolarian, diatomaceous ooze, with moderate yellowish brown (10YR 5/4) laminae of diatomaceous mud, and bottom 8 cm of unit (100-108 cm) dark yellowish brown (10YR 4/2); bioturbated throughout; gradational contact.					
			<u>smear slide:</u>					
			<u>89 cm</u>					
			Quartz and Feldspar		1			
			Clay		15			
			Volcanic glass		1			
			Diatoms		49			
300		287	Radiolarians		34			
			Sponge spicules		<1			
			Silicoflagellates		<1			
			108-147 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); zone rich in volcanic ash between 138-147 cm; slightly bioturbated; gradational contact.					
			147-167 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4); volcanic ash laminae between 151-152 cm; bioturbated; gradational contact.					
			<u>smear slide:</u>					
			<u>155 cm</u>					
			Quartz and Feldspar		<1			
			Clay		15			
			Volcanic glass		5			
400			Diatoms		68			
			Radiolarians		12			
			Sponge spicules		<1			
			Silicoflagellates		<1			
			167-770 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); 1 cm gravels at 192 cm; laminae of volcanic ash between 716-719 cm; high volcanic ash content between 220-380 cm; low diatom content between 575-610 cm; bed of diatomaceous ooze at 719-770 cm; slightly bioturbated; very gradational contact.					
			<u>smear slides:</u>					
			<u>290 cm</u>	<u>347 cm</u>	<u>466 cm</u>	<u>549 cm</u>	<u>554 cm</u>	
			Quartz and Feldspar	2	1	2	3	3
			Heavy minerals	-	-	-	-	-
			Clay	41	30	60	44	50
500			Volcanic glass	20	17	8	14	11
			Zeolites	-	-	-	-	-
			Diatoms	33	49	29	35	35
			Radiolarians	4	3	1	4	1
			Sponge spicules	<1	<1	<1	<1	<1
			Silicoflagellates	<1	<1	<1	<1	<1
600								
700								
800								
875		870						

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Logged by: Hattner, Kaharoeddin, Jones, MacKenzie

Logged by : Hattner, Kaharoeddin, Jones, MacKenzie

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 55°09.0' S		CORR. DEPTH: 4521 M, 2472 FM.	
			LONGITUDE: 09°58.0' E		CORE LENGTH: 1691 cm	
LITHOLOGIC DESCRIPTION						
			0-41 cm: Diatomaceous mud, pale yellowish brown (10YR 6/2) to dark yellowish brown (10YR 4/2); bioturbations and mottlings of muddy, diatomaceous ooze between 0-10 cm; sharp contact.			
			<u>smear slides:</u> <u>3 cm</u> <u>11 cm</u>			
			Quartz and Feldspar 3 5			
			Heavy minerals <1 <1			
			Clay 35 60			
			Volcanic glass 10 5			
			Zeolites - <1			
			Diatoms 49 26			
			Radiolarians 2 2			
			Sponge spicules <1 <1			
			Silicoflagellates <1 <1			
			41-174 cm: Diatomaceous ooze, very pale orange (10YR 8/2) to yellowish gray (5Y 7/2); zones of diatomaceous ooze enriched with ferromanganese oxide coating between 46-47 cm, 109-111 cm, 117-120 cm, and 127-131 cm; bioturbation between 152-160 cm; sharp contact.			
			<u>smear slides:</u> <u>44 cm</u> <u>49 cm</u> <u>72 cm</u> <u>109 cm</u> <u>118 cm</u> <u>155 cm</u>			
			Quartz and Feldspar 3 2 1 2 2 6			
			Heavy minerals <1 - - - -			
			Clay 10 2 10 1 1 25			
			Volcanic glass 4 <1 2 1 1 10			
			Diatoms 75 90 77 92 95 53			
			Radiolarians 7 5 8 3 1 4			
			Sponge spicules <1 <1 <1 - - <1			
			Silicoflagellates 1 1 2 1 <1 2			
			174-232 cm: Ash-bearing, diatomaceous mud, dark yellowish brown (10YR 4/2); light olive gray (5Y 6/1) volcanic ash laminae between 214-215 cm; bioturbated, sharp contact.			
		167	<u>smear slides:</u> <u>177 cm</u> <u>198 cm</u> <u>214 cm</u>			
			Quartz and Feldspar 5 2 10			
			Heavy minerals <1 <1 <1			
			Clay 55 52 46			
			Volcanic glass 15 12 7			
			Diatoms 22 30 34			
			Radiolarians 2 3 2			
			Sponge spicules - <1 <1			
			Silicoflagellates <1 <1 <1			
			232-315 cm: Diatomaceous ooze, very pale orange (10YR 8/2), alternated with light gray (N7); mottled throughout; gradational contact.			
			<u>smear slide:</u> <u>251 cm</u>			
			Quartz and Feldspar 3			
			Clay <1			
			Volcanic glass 1			
			Diatoms 94			
			Radiolarians 1			
			Silicoflagellates <1			
			315-420 cm: Pelagic clay, light olive gray (5Y 5/2) to moderate olive brown (5Y 4/4); gradational contact.			
			<u>smear slides:</u> <u>327 cm</u> <u>369 cm</u>			
			Quartz and Feldspar 9 5			
			Heavy minerals <1 <1			
			Clay 55 59			
			Volcanic glass 15 10			
			Zeolites - 2			
			Diatoms 18 15			
			Radiolarians 2 8			
			Sponge spicules - <1			
			Silicoflagellates <1 <1			
350			CONTINUED - NEXT PAGE			

Logged by: MacKenzie, Hattner, Graves

ISLAS ORCADAS PC 1176-70

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 55°09.0' S		CORR. DEPTH: 4521 M, 2472 FM.			
			LONGITUDE: 09°58.9' E		CORE LENGTH: 1691 cm			
LITHOLOGIC DESCRIPTION								
350			CONTINUED					
			420-512 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); ferromanganese-oxides enrichment between 420-425 cm, and ferromanganese-oxide laminae interstratified between 479-571 cm; gradational contact.					
400			smear slides:	423 cm	440 cm	488 cm		
			Quartz and Feldspar	1	1	3		
			Heavy minerals	<1	-	-		
			Clay	<1	2	<1		
			Volcanic glass	5	3	5		
	Mn Mn Mn		Diatoms	93	90	89		
			Radiolarians	<1	4	2		
			Silicoflagellates	<1	<1	<1		
450			512-620 cm: Ash-bearing, diatomaceous mud, light olive gray (5Y 5/2) to moderate olive brown (5Y 4/4); interstratified volcanic ash laminae between 559-610 cm; gradational contact.					
			smear slides:	515 cm	569 cm	597 cm		
			Quartz and Feldspar	3	4	4		
			Heavy minerals	<1	<1	<1		
	Mn Mn Mn		Clay	33	44	40		
			Volcanic glass	10	17	15		
			Zeolites	<1	1	1		
	Mn Mn Mn		Diatoms	50	26	35		
500			Radiolarians	3	7	4		
	Mn Mn Mn		Sponge spicules	-	<1	<1		
			Silicoflagellates	1	<1	<1		
			620-867 cm: Diatomaceous ooze, very pale orange (10YR 8/2) to light olive gray (5Y 5/2); zones of ooze enriched with ferromanganese oxides between 667-672 cm, 690-693 cm, 707-716 cm; diatomaceous mud between 843-848 cm; gradational contact.					
550			smear slides:	625 cm	714 cm	752 cm	795 cm	841 cm
			Quartz and Feldspar	1	1	1	4	<1
			Clay	2	<1	<1	2	5
			Volcanic glass	3	5	3	5	2
			Diatoms	92	90	91	82	91
			Radiolarians	2	3	4	6	<1
			Silicoflagellates	<1	<1	1	1	1
600			867-1093 cm: Pelagic clay, light olive gray (5Y 5/2), changes gradationally at 970 cm to dark yellowish brown (10YR 4/2); a sedimentary clast (ellipsoid) at 880-882 cm consists of diatomaceous ooze; zones of enrichment with ferromanganese oxide between 913-916 cm and 941-956 cm; mottling between 1040-1085 cm; gradational contact.					
			smear slides:	881 cm	888 cm	958 cm	978 cm	
			Quartz and Feldspar	8	10	5	8	
			Heavy minerals	-	<1	<1	<1	
			Clay	3	46	58	52	
			Volcanic glass	1	18	15	17	
			Zeolites	-	-	-	<1	
650			Calcareous nannos	-	<1	-	-	
			Diatoms	86	22	20	15	
			Radiolarians	<1	2	1	6	
	Mn Mn Mn		Sponge spicules	-	<1	-	<1	
			Silicoflagellates	2	<1	<1	<1	
700	Mn Mn Mn		CONTINUED - NEXT PAGE					

Logged by: MacKenzie, Hattner, Graves

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 55°09.0' S CORR. DEPTH: 4521 M, 2472 FM, LONGITUDE: 09°58.0' E CORE LENGTH: 1691 cm			
			LITHOLOGIC DESCRIPTION			
700	Mn Mn Mn		CONTINUED			
		774	<u>smear slides:</u>	<u>1033 cm</u>	<u>1076 cm</u>	<u>1091 cm</u>
			Quartz and Feldspar	5	4	10
			Heavy minerals	1	-	<1
			Clay	46	74	58
			Volcanic glass	20	11	10
			Zeolites	1	<1	<1
			Diatoms	21	8	15
			Radiolarians	6	2	5
			Sponge spicules	<1	<1	1
			Silicoflagellates	<1	<1	<1
800			1093-1265 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); mottling throughout; enrichment of ferromanganese oxide between 1248-1265 cm; sharp contact.			
	Mn Mn Mn		<u>smear slides:</u>	<u>1170 cm</u>	<u>1248 cm</u>	<u>1264 cm</u>
			Quartz and Feldspar	3	8	3
			Heavy minerals	-	-	-
			Clay	40	32	35
			Volcanic glass	7	10	5
			Zeolites	-	<1	-
			Diatoms	45	42	54
			Radiolarians	5	6	3
			Sponge spicules	<1	2	<1
			Silicoflagellates	<1	<1	<1
900			1265-1547 cm: Pelagic clay, pale yellowish brown (10YR 6/2); ferromanganese-oxide enrichment between 1452-1457 cm; grades into sub-unit of diatomaceous mud between 1538-1547 cm; sharp contact.			
	Mn Mn Mn		<u>smear slides:</u>	<u>1302 cm</u>	<u>1382 cm</u>	<u>1398 cm</u>
			Quartz and Feldspar	3	3	10
			Clay	80	80	54
			Volcanic glass	2	5	10
			Diatoms	15	12	25
			Radiolarians	<1	<1	1
			Sponge spicules	<1	<1	<1
			Silicoflagellates	<1	<1	<1
1000			<u>smear slides:</u>	<u>1454 cm</u>	<u>1510 cm</u>	<u>1541 cm</u>
			Quartz and Feldspar	8	4	8
			Clay	40	56	45
			Volcanic glass	20	12	4
			Diatoms	30	23	30
			Radiolarians	2	4	12
			Sponge spicules	<1	<1	<1
			Silicoflagellates	<1	1	1
1100			CONTINUED - NEXT PAGE			
1200	Mn Mn Mn					
1300						
1400		1386				

Logged by: MacKenzie, Hattner, Graves

ISLAS ORCADAS PC 1176-70

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 55°09.0' S CORR. DEPTH: 4521 M, 2472 FM. LONGITUDE: 09°58.0' E CORE LENGTH: 1691 cm			
			LITHOLOGIC DESCRIPTION			
1400			CONTINUED			
	Mn Mn Mn		1547-1691 cm: Diatomaceous ooze, variegated from yellowish gray (5Y 8/1) to very light gray (N8).			
1500			<u>smear slides:</u>	<u>1553 cm</u>	<u>1609 cm</u>	<u>1667 cm</u>
			Quartz and Feldspar	3	4	2
			Clay	5	20	10
			Volcanic glass	1	2	3
			Diatoms	89	66	77
			Radiolarians	1	7	8
			Sponge spicules	<1	<1	<1
			Silicoflagellates	1	1	<1
1600			Bottom topography: very gently sloping; sediment pocket between two 300 fm (549 m) relief hills, approximately 240 km southwest of an offset portion of the African-Antarctic Ridge.			
1700						

Logged by: MacKenzie, Hattner, Graves

ISLAS ORCADAS PC 1176-71

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 54°31.2' S		CORR. DEPTH: 3809 M, 2083 FM.	
			LONGITUDE: 10°17.9' E		CORE LENGTH: 1455 cm	
LITHOLOGIC DESCRIPTION						
100			0-55 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); volcanic ash scattered throughout; laminations of diatom-rich mud; gradational contact.			
			smear slide:		30 cm	
200			Quartz and Feldspar		12	
			Clay		46	
			Volcanic glass		8	
			Diatoms		30	
			Radiolarians		4	
			Silicoflagellates		<1	
300		256				
400			55-680 cm: Diatomaceous mud, moderate yellowish brown (10YR 5/4); volcaniclastic sand throughout; high concentrations of volcaniclastic sand at 160-170 cm, 270-296 cm; scattered gravel (to 4 mm); manganese nodules at 295 cm, 389 cm, 549 cm, 588 cm; slightly mottled; gradational contact.			
500			smear slides:		230 cm	
			Quartz and Feldspar		15	
			Clay		50	
			Volcanic glass		11	
			Diatoms		20	
			Radiolarians		4	
			Sponge spicules		<1	
			Silicoflagellates		<1	
600		553				
700						
800			680-1455 cm: Diatomaceous ooze, grayish orange (10YR 7/4); interspersed laminae of ooze enriched in micromanganese nodules between 950-1080 cm; laminae of micromanganese nodules at 1038-1039 cm; flow-in from 1080 cm to bottom of core.			
900		858	smear slides:		771 cm	
			Quartz and Feldspar		1	
			Clay		10	
			Volcanic glass		<1	
			Diatoms		89	
			Radiolarians		-	
			Silicoflagellates		-	
1000						
1100			Bottom topography: gently sloping; apex of an abyssal hill.			
1200		1159				
1300						
1400						
1500						


Logged by: Zemmels, Graves

ISLAS ORCADAS PC 1176-73

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 53°31.2' S		CORR. DEPTH: 3167 M, 1732 FM,			
			LONGITUDE: 10°49.1' E		CORE LENGTH: 629 CM			
LITHOLOGIC DESCRIPTION								
	BAGGED		NOTE: The top part of the core, approximately 20 cm, fell out on deck in handling; it consists of diatomaceous ooze, light olive gray (5Y 5/2), and calcareous, diatomaceous ooze, yellowish gray (5Y 7/2); the top of undisturbed section, below, is arbitrarily assigned as 20 cm.					
		20	20-36 cm: Calcareous, diatomaceous ooze, dark yellowish brown (10YR 4/2) with yellowish gray (5Y 8/1) laminae; bioturbated; gradational contact.					
100			smear slide:		27 cm			
			Quartz and Feldspar	2	Calcareous nannos	<1		
			Clay	13	Diatoms	50		
			Volcanic glass	4	Radiolarians	<1		
			Carbonate unspecified	23	Silicoflagellates	<1		
			Foraminifera	8				
			Percent Carbonate (27-28 cm): 24.0					
200			36-57 cm: Calcareous, diatomaceous mud, yellowish gray (5Y 7/2); volcanic ash-rich laminae interspersed throughout; sharp contact.					
			smear slide:		50 cm			
			Quartz and Feldspar	3	Foraminifera	6		
			Clay	44	Diatoms	25		
			Volcanic glass	7	Radiolarians	3		
			Carbonate unspecified	12	Silicoflagellates	<1		
			Percent Carbonate (50-51 cm): 9.7					
300			57-122 cm: Diatomaceous, sandy mud, dark yellowish brown (10YR 4/2); volcanic ash and lapilli scattered throughout; mottling between 57-110 cm; highly bioturbated between 110-122 cm; bioturbated, sharp contact.					
		324	smear slide:		90 cm			
			Quartz and Feldspar	18				
			Clay	48				
			Volcanic glass	8				
			Carbonate unspecified	<1				
			Calcareous nannos	<1				
			Diatoms	25				
			Radiolarians	<1				
			Sponge spicules	<1				
			Silicoflagellates	1				
400			122-629 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2) with sedimentary clasts of diatomaceous ooze, very pale orange (10YR 8/2) between 122-550 cm; volcanic ash layers between 423-425 cm and 559-565 cm; highly bioturbated between 122-550 cm.					
			smear slides:		140 cm 300 cm 460 cm 561 cm 620 cm			
500			Quartz and Feldspar	2	1	1	2	1
			Clay	5	1	5	-	2
			Volcanic glass	<1	1	1	98	-
			Micro-Mn nodules	-	-	1	<1	-
			Carbonate unspecified	<1	-	<1	-	-
			Diatoms	88	91	87	<1	91
			Radiolarians	2	4	2	<1	5
			Silicoflagellates	3	2	3	-	1
600			Bottom topography: moderately sloping; approximately 40 km southwest of apex of African-Antarctic Ridge.					

Logged by: Zemmels, Graves, Abrahams

ISLAS ORCADAS PC 1176-74

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 53°06.7' S	CORR. DEPTH: 3561 M, 1947 FM.																				
			LONGITUDE: 11°12.8' E	CORE LENGTH: 174 cm																				
LITHOLOGIC DESCRIPTION																								
			<p>0-11 cm: Radiolarian-bearing, volcanic ash, dusky yellowish brown (10YR 2/2); 2 cm pumice between 0-2 cm; ferromanganese-encrusted gravel, and manganese nodules between 4-11 cm; sharp contact.</p> <p>11-26 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); volcanic ash scattered throughout; sharp contact.</p> <table><tr><td><u>smear slide:</u></td><td><u>18 cm</u></td></tr><tr><td>Quartz and Feldspar</td><td>6</td></tr><tr><td>Clay</td><td>75</td></tr><tr><td>Volcanic glass</td><td>2</td></tr><tr><td>Micro-Mn nodules</td><td>1</td></tr><tr><td>Zeolites</td><td><1</td></tr><tr><td>Diatoms</td><td>15</td></tr><tr><td>Radiolarians</td><td>1</td></tr><tr><td>Sponge spicules</td><td><1</td></tr><tr><td>Silicoflagellates</td><td><1</td></tr></table> <p>26-174 cm: Volcaniclastic, dusky yellowish brown (10YR 2/2); grading from 0.5 mm at top, to 20 mm at bottom; some gravel-size volcaniclastics are well-rounded; micromanganese nodules scattered between 26-110 cm; mud balls (disturbed) between 80-87 cm, 92-98 cm, 120-125 cm, and 130-140 cm; slightly washed between 80-174 cm.</p> <p>Bottom topography: moderately sloping; core taken in axial valley in an offset portion of the African-Antarctic Ridge crest.</p>		<u>smear slide:</u>	<u>18 cm</u>	Quartz and Feldspar	6	Clay	75	Volcanic glass	2	Micro-Mn nodules	1	Zeolites	<1	Diatoms	15	Radiolarians	1	Sponge spicules	<1	Silicoflagellates	<1
<u>smear slide:</u>	<u>18 cm</u>																							
Quartz and Feldspar	6																							
Clay	75																							
Volcanic glass	2																							
Micro-Mn nodules	1																							
Zeolites	<1																							
Diatoms	15																							
Radiolarians	1																							
Sponge spicules	<1																							
Silicoflagellates	<1																							

Logged by: Zemmelis, Abrahams, Graves


ISLAS ORCADAS PC 1176-76

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 52°31.6' S	CORR. DEPTH: 3127 M, 1710 FM.
			LONGITUDE: 11°34.3' E	CORE LENGTH: 365 cm
LITHOLOGIC DESCRIPTION				
			0-5 cm: Diatomaceous ooze, pale yellowish brown (10YR 7/2); unit and boundary are washed.	
			smear slide:	2 cm
			Quartz and Feldspar	1
			Clay	3
			Volcanic glass	2
			Carbonate unspecified	6
			Calcareous nannos	<1
			Diatoms	85
			Radiolarians	2
			Silicoflagellates	1
		64	Percent Carbonate (2-3 cm): 2.7	
			5-27 cm: Ash-bearing, calcareous, diatomaceous ooze, dark yellowish brown (10YR 4/2); zone rich in gravel (to 1 cm) between 21-27 cm; sharp, dipping contact.	
			smear slide	11 cm
			Quartz and Feldspar	8
			Clay	5
			Volcanic glass	20
			Carbonate unspecified	15
			Foraminifera	3
			Diatoms	47
			Radiolarians	2
			Sponge spicules	<1
			Percent Carbonate (11-12 cm): 3.8	
			27-75 cm: Calcareous, diatomaceous ooze, dark yellowish brown (10YR 5/2); bioturbated throughout; gravel (to 5 mm) scattered throughout; high concentration of volcanic ash between 28-40 cm; volcanic ash layer between 73-75 cm; sharp contact.	
			smear slide:	49 cm
			Quartz and Feldspar	8
			Clay	7
			Volcanic glass	13
			Carbonate unspecified	15
			Foraminifera	<1
			Diatoms	54
			Radiolarians	2
			Sponge spicules	<1
			Silicoflagellates	<1
			Percent Carbonate (49-50 cm): 4.6	
			75-130 cm: Ash-bearing, diatomaceous, calcareous ooze, light olive gray (5Y 5/2); gravel up to (1 cm) scattered throughout; gradational contact.	
			smear slides:	79 cm 123 cm
			Quartz and Feldspar	5 5
			Clay	25 18
			Volcanic glass	10 15
			Carbonate unspecified	20 25
			Foraminifera	10 15
			Diatoms	30 20
			Radiolarians	<1 2
			Sponge spicules	<1 <1
			Silicoflagellates	<1 <1
			Percent Carbonate (79-80 cm): 8.9	

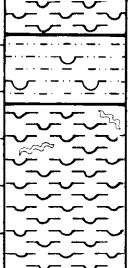

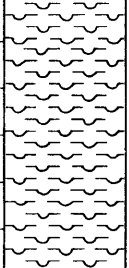

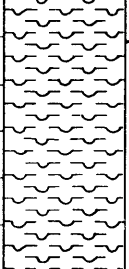
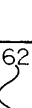
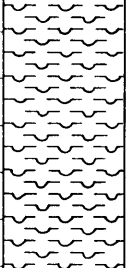

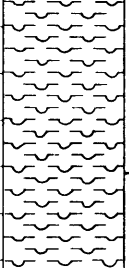

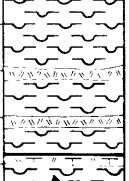

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Logged by: Graves, Kaharoeddin, Hattner, MacKenzie

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 52°31.6' S	CORR. DEPTH: 3127 M, 1710 FM.																								
			LONGITUDE: 11°34.3' E	CORE LENGTH: 365 CM																								
LITHOLOGIC DESCRIPTION																												
350			CONTINUED																									
			130-353 cm: Muddy, diatomaceous ooze, yellowish gray (5Y 6/2); increasing diatom content with depth; zones full of manganese-encrusted gravel (to 5 cm) between 200-205 cm, 211-230 cm and 343-351 cm; 1 cm manganese nodule at 249 cm; gravel (to 5 mm) scattered throughout; sharp, dipping contact.																									
			<u>smear slides:</u>	<table><thead><tr><th></th><th><u>138 cm</u></th><th><u>324 cm</u></th></tr></thead><tbody><tr><td>Quartz and Feldspar</td><td>10</td><td>3</td></tr><tr><td>Clay</td><td>32</td><td>20</td></tr><tr><td>Volcanic glass</td><td>8</td><td>4</td></tr><tr><td>Diatoms</td><td>45</td><td>68</td></tr><tr><td>Radiolarians</td><td>5</td><td>4</td></tr><tr><td>Sponge spicules</td><td><1</td><td><1</td></tr><tr><td>Silicoflagellates</td><td><1</td><td>1</td></tr></tbody></table>		<u>138 cm</u>	<u>324 cm</u>	Quartz and Feldspar	10	3	Clay	32	20	Volcanic glass	8	4	Diatoms	45	68	Radiolarians	5	4	Sponge spicules	<1	<1	Silicoflagellates	<1	1
	<u>138 cm</u>	<u>324 cm</u>																										
Quartz and Feldspar	10	3																										
Clay	32	20																										
Volcanic glass	8	4																										
Diatoms	45	68																										
Radiolarians	5	4																										
Sponge spicules	<1	<1																										
Silicoflagellates	<1	1																										
			353-365 cm: Gravelly, volcanic ash, grayish-olive (10Y 5/2).																									
			<u>smear slide:</u>	<table><thead><tr><th></th><th><u>355 cm</u> (fine fraction only)</th></tr></thead><tbody><tr><td>Quartz and Feldspar</td><td>20</td></tr><tr><td>Clay</td><td>5</td></tr><tr><td>Volcanic glass</td><td>75</td></tr><tr><td>Diatoms</td><td><1</td></tr><tr><td>Radiolarians</td><td><1</td></tr></tbody></table>		<u>355 cm</u> (fine fraction only)	Quartz and Feldspar	20	Clay	5	Volcanic glass	75	Diatoms	<1	Radiolarians	<1												
	<u>355 cm</u> (fine fraction only)																											
Quartz and Feldspar	20																											
Clay	5																											
Volcanic glass	75																											
Diatoms	<1																											
Radiolarians	<1																											
			Bottom topography: cored on a minor promonotory, in a trough, in a region of very rough topography located just 20 km north of the axis of an offset portion of the African-Antarctic Ridge.																									

ISLAS ORCADAS PC 1176-78



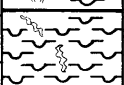



LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 51°45.5' S		CORR. DEPTH: 3974 M, 2173 FM						
			LONGITUDE: 12°03.1' E		CORE LENGTH: 1172 cm						
LITHOLOGIC DESCRIPTION											
100			0-15 cm: Diatomaceous ooze, light olive gray (5Y 6/1); volcanic ash scattered throughout; unit washed along one side of liner; sharp contact.								
			smear slide:		3 cm						
			Quartz and Feldspar		2						
			Clay		7						
			Volcanic glass		4						
			Carbonate unspecified		<1						
			Diatoms		83						
			Radiolarians		4						
			Silicoflagellates		<1						
			200			15-45 cm: Diatomaceous mud, light olive gray (5Y 5/2); unit washed along one side of liner; sharp contact.					
smear slide:		19 cm									
Quartz and Feldspar		3									
Clay		50									
Volcanic glass		10									
Carbonate unspecified		1									
Diatoms		33									
Radiolarians		3									
Sponge spicules		<1									
Silicoflagellates		<1									
300			45-676 cm: Diatomaceous ooze, grayish orange (10YR 7/4) to yellowish gray (5Y 7/2); volcanic ash laminae interspersed between 640-676 cm; bioturbation between 45-66 cm; unit slightly disturbed between 272-340 cm; sharp contact.								
			smear slides:		71 cm	192 cm	307 cm	432 cm	556 cm	653 cm	
			Quartz and Feldspar		<1	1	1	1	1	2	
			Clay		4	5	7	10	15	8	
			Volcanic glass		<1	<1	<<1	1	1	3	
			Carbonate unspecified		4	4	3	8	5	4	
			Foraminifera		-	-	<<1	-	1	1	
			Calcareous nannos		-	<<1	<<1	<<1	<<1	<<1	
			Diatoms		90	89	87	78	76	80	
			Radiolarians		<1	<<1	-	<<1	<1	1	
400			Sponge spicules		-	-	-	-	-	-	
			Silicoflagellates		2	1	2	2	1	1	
			Percent Carbonate:		3.8	4.4	6.9	6.4	5.3	NOT SAMPLED	
			(above carbonate values for samples taken over 1 cm intervals, ie.; 71-72 cm, 191-192 cm, etc.)								
			262								
			676-898 cm: Ash-bearing, diatomaceous ooze, olive gray (5Y 4/1); lens of foraminiferal-bearing, volcanic ash between 676-679 cm; watery, volcanic ash bed between 725-730 cm; lapilli scattered throughout; decreased volcanic ash content between 888-898 cm; sharp contact.								
			smear slides:		676 cm	685 cm	728 cm	753 cm	803 cm	852 cm	883 cm
			Quartz and Feldspar		25	4	15	5	3	3	4
			Clay		<<1	10	2	7	10	1	5
			Volcanic glass		56	10	40	15	15	5	12
Carbonate unspecified		3	7	4	5	6	1	<<1			
500			Foraminifera		5	1	3	1	-	-	-
			Calcareous nannos		-	<<1	-	-	-	-	<<1
			Diatoms		8	65	31	66	65	89	77
			Radiolarians		3	3	5	1	1	1	2
			Sponge spicules		-	-	<1	<1	<1	-	<<1
			Silicoflagellates		<<1	<1	<1	<1	<1	<<1	<<1
			Percent Carbonate:		5.7	5.0	5.1	3.0	NOT SAMPLED	NOT SAM- PLED	NOT SAM- PLED
			(above carbonate values for samples taken from the following intervals: 676-677 cm, 685-686 cm; 726-727 cm, and 752-753 cm.)								
			563								
			700								

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Logged by: Kaharoeddin, Graves, Hattner, MacKenzie, Zemmels

ISLAS ORCADAS PC 1176-78

75

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 51°45.5' S	CORR. DEPTH: 3974 M, 2173 FM,
			LONGITUDE: 12°03.1' E	CORE LENGTH: 1172 cm
LITHOLOGIC DESCRIPTION				
700			CONTINUED	
			898-940 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); bioturbated throughout; gradational contact.	
			smear slide: 922 cm	
			Quartz and Feldspar 2	
			Clay 5	
			Volcanic glass 4	
			Carbonate unspecified <1	
			Diatoms 84	
			Radiolarians 2	
			Sponge spicules <<1	
			Silicoflagellates 3	
800			940-982 cm: Ash-bearing, diatomaceous ooze, dark yellowish brown (10YR 4/2); lapilli scattered throughout; sharp contact.	
			smear slide: 970 cm	
			Quartz and Feldspar 4	
			Clay 20	
			Volcanic glass 15	
			Carbonate unspecified <<1	
			Diatoms 59	
			Radiolarians 2	
			Sponge spicules <<1	
			Silicoflagellates <1	
900			982-1040 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2); higher volcanic ash content between 1025-1040 cm; bioturbated throughout; sharp contact.	
			smear slide: 1023 cm	
			Quartz and Feldspar 2	
			Clay 5	
			Volcanic glass <1	
			Carbonate unspecified 5	
			Foraminifera <1	
			Calcareous nannos <<1	
			Diatoms 88	
			Radiolarians <1	
			Silicoflagellates <1	
1000			Percent Carbonate (1022-1024 cm): 5.0	
			1040-1172 cm: Volcanic ash, brownish black (5YR 2/1); fine matrix between 1062-1172 cm has been washed; contains radiolarians and foraminifera; coarse pumice (to 4 cm) scattered from 1135-1172 cm.	
			smear slide (fine matrix): 1077 cm	
			Quartz and Feldspar 20	
			Clay 5	
			Volcanic glass 39	
			Carbonate unspecified 5	
			Foraminifera 15	
			Diatoms 10	
			Radiolarians 5	
			Sponge spicules 1	
			Silicoflagellates <1	
			Percent Carbonate (1076-1078 cm): 6.9	
1100			Bottom topography: gently sloping; trough between a 900 fm (1646 m) relief peak, or ridge, to the south, and a 1400 fm (2560 m) relief peak, or ridge, to the north. This nearby, high relief is part of an offset portion of the African-Antarctic Ridge, approximately 130 km to the southwest of the core location.	
1200				

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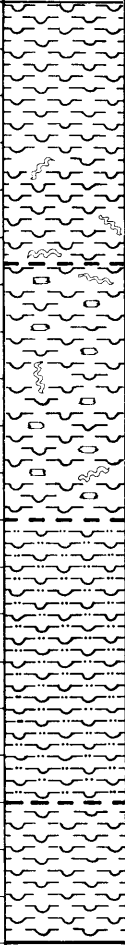
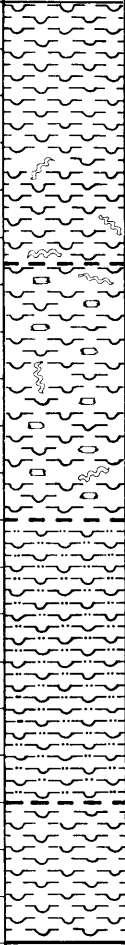
ISLAS ORCADAS PC 1176-79

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 51°11.0' S	CORR. DEPTH: 3727 M, 2938 FM.	LONGITUDE: 12°26.4' E	CORE LENGTH: 1100 cm					
LITHOLOGIC DESCRIPTION											
100			0-160 cm: Calcareous, diatomaceous ooze, yellowish gray (5Y 7/2); gradational contact.								
			smear slides:		3 cm	87 cm					
			Quartz and Feldspar		1	1					
			Clay		5	1					
			Volcanic glass		1	<1					
			Carbonate unspecified		10	15					
			Foraminifera		1	1					
			Calcareous nannos		<1	2					
			Diatoms		80	77					
			Radiolarians		1	2					
			Silicoflagellates		1	1					
			Percent Carbonate (86-87 cm): 10.4								
200		195	160-811 cm: Diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered throughout; angular, basaltic gravel (2 cm) between 686-688 cm; slightly bioturbated between 650-660 and 760-811 cm; slightly disturbed between 180-195 cm; gradational contact.								
			smear slides:		168 cm	328 cm	452 cm	475 cm	511 cm	675 cm	744 cm
			Quartz and Feldspar		<1	1	2	1	2	1	1
			Clay		<1	4	20	25	20	10	8
			Volcanic glass		-	<1	1	1	4	1	2
			Micro-Mn nodules		-	-	-	1	-	-	-
			Carbonate unspecified		1	-	<1	<1	-	6	2
			Foraminifera		-	-	-	-	-	1	1
			Calcareous nannos		-	-	-	-	-	-	<1
			Diatoms		97	93	77	71	72	79	85
			Radiolarians		-	1	<1	1	2	1	1
			Sponge spicules		-	-	-	<1	<1	-	<1
Silicoflagellates		2	1	<1	<1	<1	1	<1			
Percent Carbonate (675-676 cm): 3.6											
400			811-920 cm: Calcareous, diatomaceous ooze, yellowish gray (5Y 7/2); zone of enrichment of volcanic ash between 838-850 cm; volcanic ash scattered throughout; slightly bioturbated; gradational contact.								
			smear slides:		830 cm	845 cm					
			Quartz and Feldspar		1	3					
			Clay		3	15					
			Volcanic glass		4	20					
			Carbonate unspecified		10	15					
			Foraminifera		2	3					
			Calcareous nannos		-	<1					
			Diatoms		79	43					
			Radiolarians		1	1					
			Silicoflagellates		<1	<1					
			Percent Carbonate (844-845 cm): 4.5								
600			920-1040 cm: Muddy, diatomaceous ooze, light olive gray (5Y 6/1); volcanic ash scattered throughout; gradational contact.								
			smear slide:		935 cm						
			Quartz and Feldspar		2						
			Clay		32						
			Volcanic glass		8						
			Carbonate unspecified		<1						
			Calcareous nannos		<1						
			Diatoms		58						
			Radiolarians		<1						
			Sponge spicules		<1						
			Silicoflagellates		<1						
			700								

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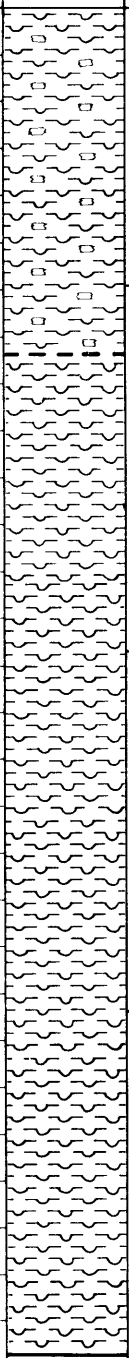

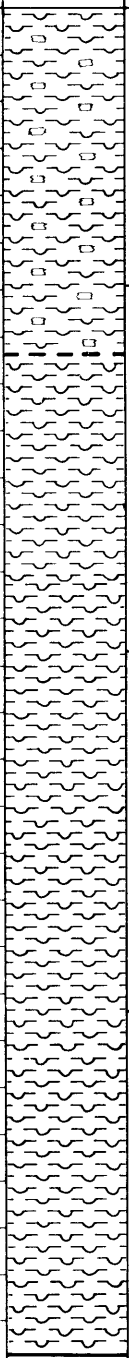

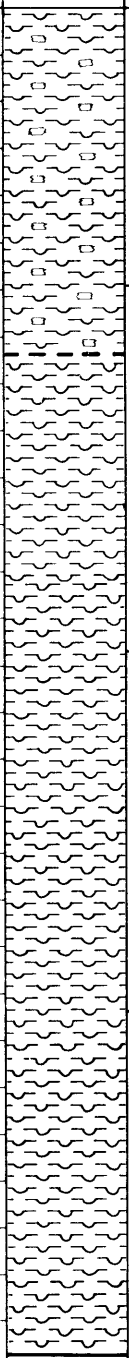

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LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 51°11.0' S	CORR. DEPTH: 3727 M, 2938 FM.
			LONGITUDE: 12°26.4' E	CORE LENGTH: 1100 cm
LITHOLOGIC DESCRIPTION				
700		798	CONTINUED	
			1040-1100 cm: Diatomaceous ooze, very pale orange (10YR 8/2).	
			<u>smear slide:</u>	<u>1068 cm</u>
			Quartz and Feldspar	1
			Clay	1
800			Volcanic glass	<1
			Carbonate unspecified	5
			Foraminifera	3
			Calcareous nannos	<1
			Diatoms	88
			Radiolarians	<1
			Silicoflagellates	2
			<u>Percent Carbonate</u> (1067-1068 cm): 9.3	
900		798	Bottom topography: flat; near the northern base of a large peak (ridge?)	
			approximately 1400 fm (2560 m) in relief; core location is approximately	
			180 km to the northeast of an offset portion of the African-Antarctic Ridge.	
1000				
1100				

Logged by: Kaharoeddin, Hattner, MacKenzie, Zemmels

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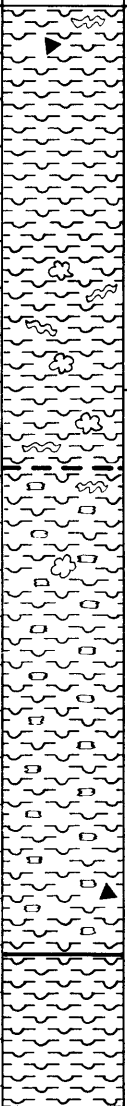
LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 50°09.2' S	CORR. DEPTH: 4265 M, 2332 FM.								
			LONGITUDE: 12°54.6' E	CORE LENGTH: 1150 cm								
LITHOLOGIC DESCRIPTION												
200			0-298 cm: Calcareous, diatomaceous ooze, light gray (N7); core section, 0-239 cm, is slightly washed along side of the core liner; between 239-260 cm is highly disturbed, core is thinning out; gradational contact.									
			smear slides:		6 cm	128 cm	269 cm					
			Quartz and Feldspar		1	<1	-					
			Clay		2	-	2					
			Volcanic glass		-	<1	<1					
			Carbonate unspecified		7	18	20					
			Foraminifera		2	1	4					
			Calcareous nannos		-	1	5					
			Diatoms		84	78	68					
			Radiolarians		4	1	<1					
			Silicoflagellates		<1	1	1					
			Percent Carbonate (6-7 cm): 7.0 (269-270 cm): 16.3									
			400			298-1150 cm: Diatomaceous ooze, pale olive (10Y 6/2), gradationally changes at 495 cm to grayish olive (10Y 4/2); contains scattered volcanic ash between 540 to 1150 cm.						
						smear slides:		403 cm	553 cm	656 cm	855 cm	1126 cm
						Quartz and Feldspar		1	1	1	1	-
						Clay		5	20	5	15	2
						Volcanic glass		<1	1	1	1	-
						Micro-Mn nodules		-	-	<1	<1	-
Carbonate unspecified		1				2	1	1	2			
Foraminifera		-				-	<1	-	-			
Diatoms		93				74	91	82	95			
Radiolarians		<1				1	1	<1	<1			
Sponge spicules		<1				<1	-	<1	-			
Silicoflagellates		<1				1	<1	<1	1			
Percent Carbonate (1125-1126 cm): 2.9												
600						Bottom topography: flat; abyssal plain, north of African-Antarctic Ridge.						

Logged by: Kaharoeddin, Hattner, Mackenzie, Graves, Zemmels

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 49°31.2' S	CORR. DEPTH: 4100 M, 2242 FM.
			LONGITUDE: 13°11.5' E	CORE LENGTH: 1169 cm
LITHOLOGIC DESCRIPTION				
			0-65 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2); volcanic ash scattered throughout; concentration of volcanic ash and lapilli at 9-11 cm; slightly bioturbated from 0-34 cm; gradational contact.	
			smear slides:	3 cm 46 cm
			Quartz and Feldspar	4 4
			Clay	2 2
			Volcanic glass	<1 6
			Carbonate unspecified	- <1
			Diatoms	92 87
			Radiolarians	1 1
			Silicoflagellates	1 <1
			65-116 cm: Calcareous, diatomaceous ooze, very pale orange (10YR 8/2); scattered volcanic ash from 100-116 cm; slightly bioturbated from 100-116 cm; gradational contact.	
			smear slide:	91 cm
			Quartz and Feldspar	<1
			Clay	3
			Volcanic glass	1
			Carbonate unspecified	10
			Foraminifera	6
			Calcareous nannos	5
			Diatoms	73
			Radiolarians	1
			Silicoflagellates	1
			Percent Carbonate (91-92 cm): 15.2	
			116-897 cm: Diatomaceous ooze, color varies from grayish orange (10YR 7/4) to greenish gray (5GY 6/1) between 413-477 and 762-897 cm, to moderate olive brown (5Y 4/4) between 477-762 cm; volcanic ash scattered throughout; laminae of volcanic ash at 337 cm and 406 cm; 1 cm pumice at 303 cm, 429 cm, 444 cm, 510 cm, 605 cm and 717 cm; 2 cm gravel between 416-418 cm and 544-546 cm; slightly mottled between 150-158 cm and 800-897 cm; bioturbated between 150-158 cm, 350-410 cm, 413-430 cm, 709-710 cm and 800-897 cm; unit is disturbed (washed along one side of liner) between 160-250 cm; gradational contact.	
			smear slides:	172 cm 344 cm 445 cm 504 cm 590 cm 736 cm
			Quartz and Feldspar	1 4 2 2 4 2
			Clay	10 5 16 10 2 8
			Volcanic glass	2 2 1 2 3 5
			Micro-Mn nodules	- - - - <1 -
			Carbonate unspecified	8 1 - <1 - -
			Foraminifera	2 - - - - -
			Diatoms	73 86 80 85 90 84
			Radiolarians	3 1 1 1 1 1
			Sponge spicules	- - - - - <1
			Silicoflagellates	1 1 <1 <1 <1 <1
			smear slides:	806 cm 882 cm
			Quartz and Feldspar	3 2
			Clay	10 2
			Volcanic glass	1 1
			Carbonate unspecified	- 3
			Diatoms	84 88
			Radiolarians	1 1
			Sponge spicules	<1 -
			Silicoflagellates	1 3
			Percent Carbonate (172-173 cm): 6.9 (882-883 cm): 2.5	
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Logged by: Kaharoeddin, MacKenzie, Hattner, Graves, Jones, Zemmels

ISLAS ORCADAS PC 1176-82

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 49°31.2' S	CORR. DEPTH: 4100 M, 2242 FM	
			LONGITUDE: 13°11.5' E	CORE LENGTH: 1169 cm	
LITHOLOGIC DESCRIPTION					
700			CONTINUED		
		897-1103 cm: Calcareous, diatomaceous ooze, very pale orange (10YR 8/2); slightly bioturbated and mottled between 897-940 cm; 1 cm pumice at 1083-1084 cm; washed along one side of liner between 1030-1103 cm; sharp contact.			
800		<u>smear slides:</u>	<u>916 cm</u>	<u>963 cm</u>	<u>1084 cm</u>
		Quartz and Feldspar	1	1	1
		Clay	4	3	3
		Volcanic glass	1	1	<1
		Carbonate unspecified	16	9	12
		Foraminifera	4	6	4
		Calcareous nannos	1	<1	<1
		Diatoms	70	75	77
		Radiolarians	1	4	2
		Sponge spicules	-	-	<1
		Silicoflagellates	2	1	1
900		863	Percent Carbonate (963-964 cm): 15.3 (1083-1084 cm): 23.0		
			1103-1169 cm: Diatomaceous ooze, light olive gray (5Y 5/2); scattered volcanic ash between 1103-1133 cm; washed along one side of liner between 1103-1169 cm.		
1000			<u>smear slide:</u>	<u>1143 cm</u>	
			Quartz and Feldspar	1	
			Clay	8	
			Volcanic glass	2	
			Carbonate unspecified	3	
		Diatoms	85		
		Radiolarians	1		
		Silicoflagellates	<1		
1100		Percent Carbonate (1123-1124 cm): 2.0			
		Bottom topography: flat; immediately north of a 700 fm (1280 m) rise on the abyssal plain north of the African-Antarctic Ridge.			
1200					

Logged by: Kaharoeddin, MacKenzie, Hattner, Graves, Jones, Zemmels

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 48°59.1' S LONGITUDE: 13°26.4' E	CORR. DEPTH: 4634 M, 2534 FM. CORE LENGTH: 1710 CM
LITHOLOGIC DESCRIPTION				
			0-1584 cm: Diatomaceous ooze, dusky yellow green (5GY 5/2), changing gradationally to dusky yellow (5Y 6/4) at 1450 cm; interspersed volcanic ash laminae between 90-1540 cm; 1 cm pumice between 7-8 cm; 5 mm pumice at 314 cm; 1 cm sedimentary clast between 1189-1190 cm; core washed along one side of liner from 195-330 cm; gradational contact.	
			<u>smear slides:</u>	<u>4 cm</u> <u>69 cm</u> <u>143 cm</u> <u>245 cm</u> <u>425 cm</u>
			Quartz and Feldspar	3 3 5 4 2
			Clay	3 10 10 6 8
			Volcanic glass	2 2 3 <1 <1
			Micro-Mn nodules	- <1 <1 <1 -
			Carbonate unspecified	- <1 <1 8 1
			Foraminifera	- - - <1 -
			Calcareous nannos	- - - <1 -
			Diatoms	91 83 79 81 88
			Radiolarians	1 2 3 <1 1
			Sponge spicules	<1 <1 - - -
			Silicoflagellates	<1 <1 <1 <1 <1
			<u>smear slides:</u>	<u>549 cm</u> <u>644 cm</u> <u>792 cm</u> <u>898 cm</u>
			Quartz and Feldspar	5 4 3 1
			Clay	8 15 20 2
			Volcanic glass	10 2 2 1
			Carbonate unspecified	<1 1 <1 7
			Foraminifera	- - - 3
			Diatoms	77 76 74 85
			Radiolarians	<1 2 1 1
			Sponge spicules	- - <1 -
			Silicoflagellates	<1 <1 <1 <1
			<u>smear slides:</u>	<u>1058 cm</u> <u>1185 cm</u> <u>1325 cm</u> <u>1444 cm</u>
			Quartz and Feldspar	7 7 2 3
			Clay	5 12 5 7
			Volcanic glass	4 2 1 2
			Micro-Mn nodules	- 1 1 <1
			Carbonate unspecified	2 <1 - <1
			Calcareous nannos	<1 - - -
			Diatoms	81 78 90 87
			Radiolarians	1 <1 1 1
			Sponge spicules	<1 - - -
			Silicoflagellates	<1 <1 <1 <1
			<u>Percent Carbonate</u>	(244-245 cm): 5.9 (898-899 cm): 6.4
			1584-1615 cm: Calcareous, diatomaceous ooze, yellowish gray (5Y 7/2); sharp contact.	
			<u>smear slide:</u>	<u>1605 cm</u>
			Quartz and Feldspar	1
			Clay	8
			Volcanic glass	1
			Micro-Mn nodules	<1
			Carbonate unspecified	12
			Foraminifera	3
			Diatoms	72
			Radiolarians	2
			Silicoflagellates	1
			<u>Percent Carbonate</u>	(1604-1605 cm): 9.6
			CONTINUED - NEXT PAGE	

Logged by: Kaharoeddin, Graves, Hattner, MacKenzie, Zemmels

ISLAS ORCADAS PC 1176-83

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 48°59.1' S	CORR. DEPTH: 4634 M, 2534 FM,
			LONGITUDE: 13°26.4' E	CORE LENGTH: 1710 CM
LITHOLOGIC DESCRIPTION				
1400		1406	CONTINUED	
			1615-1710 cm: Diatomaceous ooze, light olive brown (5Y 5/6).	
			<u>smear slide:</u> <u>1706 cm</u>	
			Quartz and Feldspar 2	
			Clay 8	
			Volcanic glass 1	
1600			Micro-Mn nodules <1	
			Carbonate unspecified 3	
			Diatoms 84	
			Radiolarians 1	
			Silicoflagellates 1	
			<u>Percent Carbonate</u> (1706-1707 cm): 2.5	
1800			Bottom topography: flat; just north of a sediment-covered, 800 fm (1463 m)	
			rise on the abyssal plain north of the African-Antarctic ridge.	

Logged by: Kaharoeddin, Graves, Hattner, MacKenzie, Zemmels

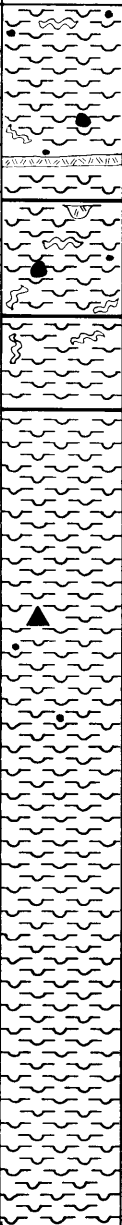
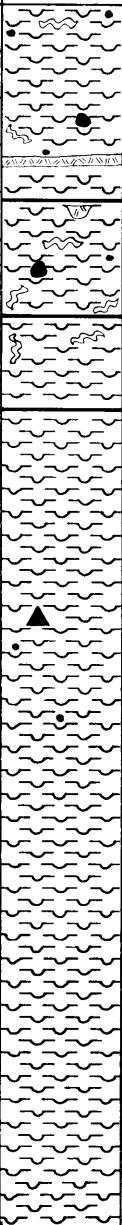
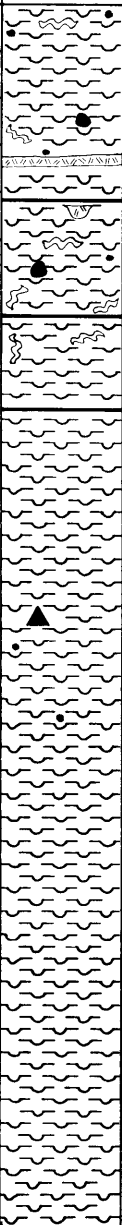
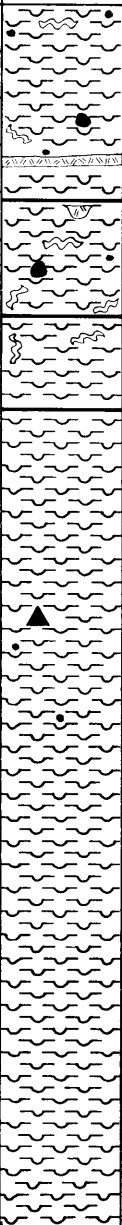
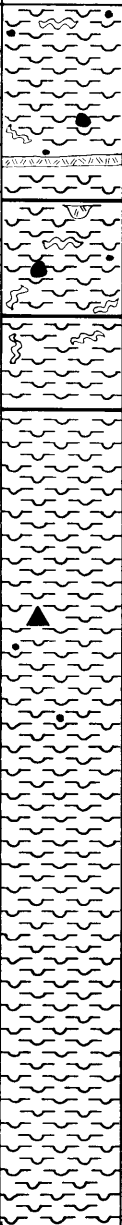
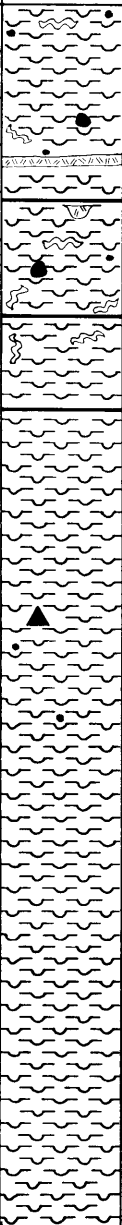
LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 48°20.9' S	CORR. DEPTH: 4499 M, 2460 FM.
			LONGITUDE: 13°45.7' E	CORE LENGTH: 1743 cm
LITHOLOGIC DESCRIPTION				
	BAGGED		NOTE: The top part of the core (approximately 96 cm) fell out of liner (onto the ground) during transport, and consisted of diatomaceous ooze, light olive gray (5Y 5/2); the top of undisturbed section is arbitrarily assigned 96 cm.	
			96-307 cm: Diatomaceous ooze, light olive gray (5Y 5/2); lightly scattered volcanic ash; sharp, dipping contact.	
100			smear slides:	106 cm 192 cm 233 cm 277 cm
			Quartz and Feldspar	2 3 3 3
			Clay	12 6 7 15
			Volcanic glass	<1 1 1 1
			Micro-Mn nodules	<1 - <1 <1
			Carbonate unspecified	- - 1 -
			Diatoms	81 84 85 78
			Radiolarians	5 5 3 3
			Sponge spicules	- <1 - -
			Silicoflagellates	<1 1 <1 <1
200			307-557 cm: Diatomaceous ooze, light olive gray (5Y 6/1); volcanic ash scattered throughout; beds of ash-rich, radiolarian ooze, light olive gray (5Y 5/2), between 352-362 cm, 374-384 cm, 400-403 cm, 449-470 cm, 511-527 cm and 543-557 cm; bed of foraminifera-bearing, volcanic ash, dark gray (N3), between 506-511 cm; 1 cm manganese nodules between 546-548 cm; 2 cm manganese nodules between 544-546 cm and 553-555 cm; 3 cm manganese nodules between 355-358 cm, 360-363 cm, 399-402 cm, 479-482 cm and 551-554 cm; 4 cm manganese nodules between 368-372 cm and 456-460 cm; 5 cm gravel between 403-408 cm; sharp contact.	
	226		smear slides:	334 cm 428 cm 509 cm 535 cm 548 cm
			Quartz and Feldspar	3 3 30 3 12
			Clay	10 8 5 5 15
			Volcanic glass	5 2 25 <1 8
			Micro-Mn nodules	- - - - <1
			Carbonate unspecified	3 4 11 4 <<1
			Foraminifera	- <1 20 - -
			Calcareous nannos	- - <1 - -
			Diatoms	77 77 8 81 60
			Radiolarians	2 6 1 6 5
			Sponge spicules	<1 - <1 <1 <1
			Silicoflagellates	<1 <1 - 1 <1
300			Percent Carbonate (333-334 cm): 2.3 (428-429 cm): 2.5 (509-510 cm): 4.7 (535-536 cm): 2.4	
400			557-867 cm: Diatomaceous ooze, light olive gray (5Y 5/2); between 611-687 cm, color is pale yellowish brown (10YR 6/2); volcanic ash scattered throughout; gravel (5 mm) lightly scattered between 670-735 cm; unit has a higher mud content than the overlying and underlying unit; interstratified laminae of volcanic ash between 830-834 cm; 2 cm gravel between 795-797 cm, and 1 cm gravel between 824-825 cm; slightly bioturbated between 580-707 cm and 812-820 cm; sharp contact.	
			smear slides:	576 cm 656 cm 729 cm 793 cm 844 cm
			Quartz and Feldspar	2 1 4 4 7
			Clay	20 25 15 5 25
			Volcanic glass	<1 - 2 2 1
			Micro-Mn nodules	- <<1 <<1 - -
			Carbonate unspecified	<<1 7 - - <1
			Foraminifera	- 1 - - -
			Diatoms	74 60 74 79 61
			Radiolarians	4 4 4 8 6
			Sponge spicules	- - <1 <1 <1
			Silicoflagellates	<1 2 1 2 <1
500			Percent Carbonate (656-657 cm): 4.7	
	530			
600				
700				

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Logged by: Kaharoeddin, Graves, Hattner, MacKenzie, Zemmels

ISLAS ORCADAS PC 1176-85

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 48°20.9' S		CORR. DEPTH: 4499 m, 2460 fm.			
			LONGITUDE: 13°45.7' E		CORE LENGTH: 1743 cm			
LITHOLOGIC DESCRIPTION								
CONTINUED								
700		834	867-965 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); volcanic ash scattered between 917-965 cm; 1 cm angular gravel from 930-931 cm; 4 cm angular gravel between 924-928 cm; 2 cm sedimentary cast filled with volcanic ash between 879-881 cm; slightly bioturbated throughout; sharp contact.					
smear slide: 918 cm								
Quartz and Feldspar 3								
Clay 5								
Volcanic glass <1								
Carbonate unspecified <1								
Diatoms 88								
Radiolarians 4								
Sponge spicules <1								
Silicoflagellates <1								
900		W	965-1044 cm: Diatomaceous ooze, medium light gray (N6); unit has higher mud content than the overlying and underlying unit; slightly bioturbated between 965-990 cm; watery; highly disturbed between 1016-1036 cm; sharp contact.					
smear slide: 998 cm								
Quartz and Feldspar 2								
Clay 20								
Diatoms 76								
Radiolarians 2								
Sponge spicules <1								
Silicoflagellates <<1								
1100				S	1044-1743 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4), gradationally changing to light olive gray (5Y 6/1) at 1140 cm, and gradationally changing to light olive gray (5Y 5/2) at 1400 cm; volcanic ash scattered between 1200-1230 cm, and 1400-1689 cm; 1 cm pumice at 1225 cm; 5 mm gravel at 1242 cm; 1 cm gravel between 1305-1306 cm; slightly washed between 1118-1138 cm; flow-in between 1689-1743 cm.			
smear slides:								
1088 cm 1173 cm 1343 cm 1498 cm 1606 cm 1688 cm								
Quartz and Feldspar 4 5 1 1 1 1								
Clay 5 10 20 5 3 8								
Volcanic glass <1 1 - - - -								
Micro-Mn nodules - - - <1 <1 <1								
Carbonate unspecified - <1 <1 - - -								
Diatoms 76 79 72 84 86 81								
Radiolarians 15 5 5 10 10 10								
Silicoflagellates <1 <1 2 - <1 <<1								
1300		1442	Bottom topography: flat; abyssal plain, gently sloping between low-relief (100-200 fm; 183-366 m), broad abyssal hills north of the African-Antarctic Ridge.					
1500		FLOW IN						
1700								

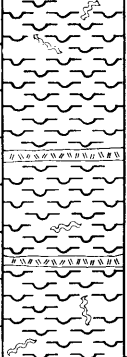
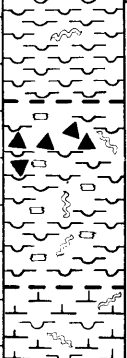
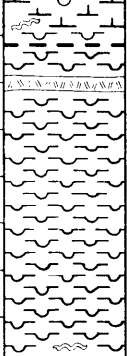
Logged by: Kaharoeddin, Graves, Hattner, MacKenzie, Zemmelis

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 48°02.6' S		CORR. DEPTH: 4338 M, 2372 FM.	
			LONGITUDE: 13°49.0' E		CORE LENGTH: 1721 cm	
LITHOLOGIC DESCRIPTION						
			0-11 cm: Calcareous ooze, pale yellowish brown (10YR 6/2); zone of calcareous ooze rich in iron oxides and volcanic ash between 6-11 cm; sharp contact.			
			smear slide:		5 cm	
			Clay		2	
			Volcanic glass		1	
			Carbonate unspecified		63	
			Foraminifera		15	
			Calcareous nannos		2	
			Diatoms		15	
			Radiolarians		2	
			Silicoflagellates		<1	
			Percent Carbonate (4-5 cm): 48.2			
			11-140 cm: Diatomaceous ooze, grayish orange (10YR 7/4), changes gradationally to greenish gray (5GY 6/1) at 120 cm; volcanic ash scattered between 67-73 cm; 2 cm scoriae at 36-38 cm; slightly bioturbated between 62-90 cm and 105-112 cm; gradational contact.			
			smear slides:		28 cm	
			Quartz and Feldspar		1	
			Clay		6	
			Volcanic glass		<1	
			Carbonate unspecified		4	
			Foraminifera		<1	
			Calcareous nannos		-	
			Diatoms		86	
			Radiolarians		2	
			Silicoflagellates		1	
			Percent Carbonate (28-29 cm): 2.5		(135-136 cm): 16.1	
			140-187 cm: Diatomaceous, nannofossil ooze, light gray (N7), changes sharply to brownish gray (5YR 4/2) at 176 cm; high diatom content between 175-187 cm; volcanic ash scattered throughout; volcanic ash content increases with depth; bioturbation between 146-175 cm and between 180-187 cm; gradational contact.			
			smear slide:		163 cm	
			Quartz and Feldspar		<1	
			Clay		10	
			Carbonate unspecified		5	
			Foraminifera		7	
			Calcareous nannos		60	
			Diatoms		15	
			Radiolarians		3	
			Sponge spicules		<<1	
			Silicoflagellates		<1	
			Percent Carbonate (163-164 cm): 59.1			
			187-548 cm: Diatomaceous ooze, yellowish gray (5Y 7/2), gradationally changes to light olive gray (5Y 6/1) at 270 cm; volcanic ash scattered throughout; interspersed volcanic ash laminae between 267-296 cm, and 414-464 cm; 1 cm pumice at 233-234 cm and 238-239 cm; bioturbation between 187-196 cm, 211-240 cm, 320-374 cm, and 444-520 cm; gradational contact.			
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	
			Percent Carbonate (251-252 cm): 2.4		(486-487 cm): 2.4	
			smear slides:		197 cm	
			Quartz and Feldspar		6	
			Clay		15	
			Volcanic glass		3	
			Micro-Mn nodules		-	
			Carbonate unspecified		1	
			Calcareous nannos		<1	
			Diatoms		74	
			Radiolarians		1	
			Sponge spicules		<1	
			Silicoflagellates		<1	

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Logged by: Hattner, Kaharoeddin, Graves, MacKenzie, Zemmels, Jones

ISLAS ORCADAS PC 1176-86

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 48°02.6' S	CORR. DEPTH: 4338 M, 2372 FM.			
			LONGITUDE: 13°49.0' E	CORE LENGTH: 1721 CM			
LITHOLOGIC DESCRIPTION							
350		503	CONTINUED				
			548-625 cm: Calcareous, diatomaceous ooze, light olive gray (5Y 6/1); volcanic ash scattered between 548-578 cm; scattered (5mm) pumice between 555-578 cm; bioturbations between 557-578 cm; slightly bioturbated from 578-625 cm; gradational contact.				
			smear slide: 604 cm				
450			Quartz and Feldspar	<1			
			Clay	11			
			Carbonate unspecified	25			
			Foraminifera	3			
			Calcareous nannos	2			
			Diatoms	56			
			Radiolarians	3			
	Silicoflagellates	<1					
	Percent Carbonate (604-605 cm): 13.5						
550		809	625-674 cm: Diatomaceous, nannofossil ooze, light gray (N7); volcanic ash scattered between 671-673 cm; slightly bioturbated throughout; gradational contact.				
			smear slide: 643 cm				
			Carbonate unspecified	7			
			Foraminifera	12			
			Calcareous nannos	51			
			Diatoms	28			
			Radiolarians	2			
			Silicoflagellates	<<1			
650			Percent Carbonate (643-644 cm): 59.5				
			674-1298 cm: Diatomaceous ooze, grayish olive (10Y 4/2), gradationally changes to light olive gray (5Y 6/1) between 871-1115 cm, and to medium gray (N5) from 1251-1298 cm; volcanic ash scattered between 895-1019 cm, 1044-1097 cm, 1135-1143 cm, and 1187-1198 cm, interspersed volcanic ash laminae between 686-694 cm, 850-871 cm, 1146-1156 cm, 1207-1213 cm, 1251-1254 cm and 1269-1272 cm; angular gravel (1 cm) between 1169-1170 cm; pumice (4 cm) between 1287-1291 cm; bioturbation from 800-804 cm; gradational contact.				
750	smear slides: 687 cm 729 cm 830 cm 889 cm 944 cm 1037 cm						
	Quartz and Feldspar	3	<1	5	3	5	2
	Clay	5	3	17	10	10	2
	Volcanic glass	1	1	2	<1	1	1
	Micro-Mn nodules	-	-	-	-	-	<1
	Carbonate unspecified	1	<1	-	-	-	-
	Diatoms	86	90	68	81	76	92
	Radiolarians	<1	2	8	4	7	3
	Sponge spicules	-	-	<1	-	<<1	-
	Silicoflagellates	<1	<1	<<1	2	1	<1
850			smear slides: 1108 cm 1133 cm 1246 cm				
			Quartz and Feldspar	2	3	5	
			Clay	5	1	10	
			Volcanic glass	-	1	2	
			Micro-Mn nodules	-	1	-	
			Carbonate unspecified	2	-	-	
			Diatoms	89	92	70	
			Radiolarians	1	1	13	
			Sponge spicules	-	<1	<1	
			Silicoflagellates	1	1	<1	
950	Percent Carbonate (687-688 cm): 2.1						
1050	CONTINUED - NEXT PAGE						

Logged by: Hattner, Kaharoeddin, Graves, MacKenzie, Zemmels, Jones

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 48°02.6' S	CORR. DEPTH: 4338 M, 2372 FM.	
			LONGITUDE: 13°49.0' E	CORE LENGTH: 1721 CM	
LITHOLOGIC DESCRIPTION					
1050			CONTINUED		
			1298-1323 cm: Diatomaceous, nannofossil ooze, light gray (N7); volcanic ash scattered throughout; slightly bioturbated throughout; sharp and bioturbated contact.		
		1112	smear slide: 1311 cm		
1150			Quartz and Feldspar	1	
			Clay	5	
			Carbonate unspecified	10	
			Foraminifera	13	
			Calcareous nannos	45	
			Diatoms	20	
			Radiolarians	4	
			Sponge spicules	<1	
			Silicoflagellates	2	
			Percent Carbonate (1311-1312 cm): 33.8		
1250			1323-1721 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4), changing at 1378 cm to moderate olive brown (5Y 4/4), and at 1500 cm to light olive brown (5Y 5/6); volcanic ash scattered throughout; lamina of volcanic ash at 1377-1378 cm; highly bioturbated between 1323-1333 cm.		
			smear slides:	1336 cm	1409 cm
			Quartz and Feldspar	4	4
			Clay	2	6
			Volcanic glass	-	<1
			Micro-Mn nodules	-	<1
			Carbonate unspecified	-	1
			Diatoms	92	85
			Radiolarians	2	2
			Sponge spicules	-	<1
			Silicoflagellates	<1	2
1350				1451 cm	1531 cm
			Quartz and Feldspar	4	2
			Clay	2	1
			Volcanic glass	-	<1
			Micro-Mn nodules	-	<1
			Carbonate unspecified	<1	<1
			Diatoms	92	93
			Radiolarians	2	2
			Sponge spicules	<1	-
			Silicoflagellates	<1	1
		1417	Bottom topography: rather steeply-sloping flank of a monocline with a thick mantle of sediment, adjacent to a seamount of 400 fm (732 m) relief; on the abyssal plain north of the African-Antarctic Ridge.		
1450					
1550					
1650					

Logged by: Hattner, Kaharoeddin, Graves, MacKenzie, Zemmels, Jones

ISLAS ORCADAS PC 1176-87

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 47°29.5' S CORR. DEPTH: 4843 M, 2648 FM. LONGITUDE: 14°04.0' E CORE LENGTH: 1472 CM				
			LITHOLOGIC DESCRIPTION				
0-12 cm			Diatomaceous ooze, yellowish gray (5Y 7/2); sharp, dipping contact.				
			<u>smear slide:</u> <u>5 cm</u>				
			Quartz and Feldspar	3			
			Clay	20			
			Volcanic glass	<<1			
			Carbonate unspecified	<<1			
			Diatoms	74			
			Radiolarians	2			
			Sponge spicules	<1			
			Silicoflagellates	1			
12-37 cm			Diatomaceous ooze, grayish olive (10Y 4/2); laminae of calcareous ooze, mud, and diatomaceous mud interstratified throughout the unit; sharp, dipping contact.				
			<u>smear slide:</u> <u>26 cm</u>				
			Quartz and Feldspar	1			
			Clay	13			
			Volcanic glass	<1			
			Micro-Mn nodules	1			
			Carbonate unspecified	<1			
			Foraminifera	<<1			
			Diatoms	80			
			Radiolarians	4			
			Sponge spicules	<1			
			Silicoflagellates	1			
37-363 cm			Diatomaceous ooze, light olive gray (5Y 6/1); volcanic ash scattered between 320-340 cm; washed along one side of core liner between 255-363 cm; gradational contact.				
			<u>smear slides:</u>	<u>50 cm</u>	<u>177 cm</u>	<u>214 cm</u>	<u>352 cm</u>
			Quartz and Feldspar	1	2	3	8
			Clay	15	20	16	20
			Volcanic glass	<1	<<1	1	<1
			Micro-Mn nodules	<<1	-	-	1
			Carbonate unspecified	<<1	-	-	4
			Foraminifera	-	-	-	1
			Calcareous nannos	-	-	-	<1
			Diatoms	82	74	75	56
			Radiolarians	1	3	3	8
			Sponge spicules	<<1	<<1	-	<<1
			Silicoflagellates	1	1	2	2
			<u>Percent Carbonate (352-353 cm):</u> 4.5				
363-1472 cm			Diatomaceous ooze, light olive gray (5Y 5/2); with scattered volcanic ash; contains angular to subrounded blocks of sedimentary units of differing lithologies and colors, as follows: diatomaceous ooze, yellowish gray (5Y 7/2); calcareous, diatomaceous ooze, light olive gray (5Y 6/1); diatomaceous, calcareous ooze, light gray (N7), and diatomaceous, nannofossil ooze, greenish gray (5GY 6/1). 1 cm angular gravel between 845-846 cm; 1 cm angular scoriae between 934-935 cm; liner broken between 433-450 cm, resulting in some sediment loss between 363-500 cm; slightly washed along side of core liner between 363-500 cm and 559-620 cm; gradational change to flow-in at 1245 cm. NOTE: All sedimentary blocks which occur within the primary unit are illustrated. These blocks are clearly of differing lithologies, both from each other and the primary unit. Microfossils in the blocks are of different ages than those of the primary unit.				


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Logged by: Kaharoeddin, Hattner, MacKenzie, Zemmel

ISLAS ORCADAS PC 1176-88

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 46°57.8' S	CORR. DEPTH: 5106 M, 2792 FM.				
			LONGITUDE: 14°18.2' E	CORE LENGTH: 1012 CM				
LITHOLOGIC DESCRIPTION								
			0-144 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); angular gravel (1 cm) scattered between 65-90 cm; corrugated and dipping laminae of ash-bearing, diatomaceous ooze between 31-38 cm; beds of radiolarian, diatomaceous ooze between 55-64 cm, 90-95 cm and 117-119 cm; a piece of broken core liner between 45-59 cm; sharp contact.					
			smear slides:	3 cm	45 cm	58 cm	83 cm	133 cm
			Quartz and Feldspar	2	4	5	3	1
			Clay	2	6	4	10	20
			Volcanic glass	2	1	4	2	1
			Micro-Mn nodules	-	-	<1	1	<1
			Carbonate unspecified	-	-	-	1	<1
			Diatoms	89	85	85	75	76
			Radiolarians	5	3	2	8	2
			Sponge spicules	<1	<1	-	-	<1
			Silicoflagellates	<1	1	<1	<1	<1
			144-165 cm: Radiolarian, diatomaceous ooze, pale yellowish brown (10YR 6/2); sharp, dipping contact.					
			smear slide:	145 cm				
			Quartz and Feldspar	5				
			Clay	15				
			Volcanic glass	<1				
			Micro-Mn nodules	<1				
			Diatoms	60				
			Radiolarians	17				
			Sponge spicules	1				
			Silicoflagellates	2				
			165-234 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); a dipping laminae of radiolarian ooze at 172 cm; interspersed radiolarian laminae between 211-234 cm, all of them dipping; sharp, horizontal contact.					
			smear slide:	206 cm				
			Quartz and Feldspar	3				
			Clay	10				
			Volcanic glass	1				
			Micro-Mn nodules	<1				
			Diatoms	86				
			Radiolarians	<1				
			Sponge spicules	<1				
			Silicoflagellates	<1				
			234-245 cm: Diatomaceous; radiolarian ooze, dusky yellow (5Y 6/4); bottom 3 cm consists almost entirely of sand; sharp, dipping contact. NOTE: smear-slide is biased toward fine fraction (diatoms).					
			smear slide:	238 cm				
			Quartz and Feldspar	15		Radiolarians		45
			Clay	6		Sponge spicules		<1
			Micro-Mn nodules	1		Silicoflagellates		<1
			Volcanic glass	8				
			Diatoms	25				
			245-280 cm: Diatomaceous ooze, moderate yellow (5Y 7/6); with interspersed laminae of radiolarian-rich, diatomaceous ooze, pale yellowish brown (10YR 6/2); sharp contact.					
			smear slide:	252 cm				
			Quartz and Feldspar	7		Diatoms		55
			Clay	20		Radiolarians		15
			Volcanic glass	<1		Sponge spicules		<1
			Micro-Mn nodules	2		Silicoflagellates		1

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LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 46°57.8' S		CORR. DEPTH: 5106 M, 2792 FM,			
			LONGITUDE: 14°18.2' E		CORE LENGTH: 1012 cm			
LITHOLOGIC DESCRIPTION								
280			CONTINUED					
			280-423 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); laminae of ash-bearing, diatomaceous ooze between 292-294 cm; 1 cm gravel at 351 cm; volcanic ash scattered between 340-380 cm; core liner is imploded between 300-340 cm, half of sediment missing; gradational contact.					
			smear slides:		287 cm	390 cm	287 cm	390 cm
320			Quartz and Feldspar	4	3	Diatoms	75	83
			Clay	15	5	Radiolarians	4	9
			Volcanic glass	<1	<1	Sponge spicules	<1	<1
			Micro-Mn nodules	2	-	Silicoflagellates	<1	<1
			423-470 cm: Muddy, diatomaceous ooze, yellowish gray (5Y 7/2); 2 cm sedimentary clast between 457-459 cm; volcanic ash scattered throughout; sharp contact.					
			smear slide:		452 cm			
360			Quartz and Feldspar	10	Diatoms	58		
	Clay	25	Radiolarians	7				
	Volcanic glass	<1	Sponge spicules	<1				
	Micro-Mn nodules	<<1	Silicoflagellates	<1				
	Carbonate unspecified	<1						
	470-491 cm: Diatomaceous mud, greenish gray (5G 6/1); 1 cm sedimentary clast between 485-486 cm; volcanic ash scattered throughout; sharp, dipping contact.							
	smear slide:		483 cm					
400	Quartz and Feldspar	12	Diatoms	30				
	Clay	50	Radiolarians	6				
	Volcanic glass	2	Sponge spicules	<1				
	Carbonate unspecified	<1	Silicoflagellates	<1				
	404	491-512 cm: Radiolarian, diatomaceous ooze, yellowish gray (5Y 7/2), gradational change to medium dark gray (N4); dipping stratification; sharp, dipping contact.						
	smear slides:		499 cm	509 cm	499 cm	509 cm		
440	Quartz and Feldspar	8	7	Diatoms	50	72		
	Clay	20	5	Radiolarians	17	10		
	Volcanic glass	3	5	Sponge spicules	<1	<1		
	Micro-Mn nodules	1	-	Silicoflagellates	1	1		
	Carbonate unspecified	<1	-					
	512-555 cm: Diatomaceous ooze, light olive gray (5Y 6/1), gradational change to light olive gray (5Y 5/2) at 524 cm; sharp, dipping contact.							
	smear slides:		515 cm	548 cm	515 cm	548 cm		
480	Quartz and Feldspar	1	2	Diatoms	84	87		
	Clay	15	9	Radiolarians	<1	<1		
	Volcanic glass	<1	1	Silicoflagellates	<1	1		
	Carbonate unspecified	<1	<1					
	555-626 cm: Diatomaceous ooze, consisting of 3 sub-units based on color; between 555-580 cm, greenish gray (5GY 6/1) with sharp, dipping contact; between 580-591 cm, light olive gray (5Y 5/2) with sharp, horizontal contact; between 591-626 cm, yellowish gray (5Y 7/2) with sharp, dipping contact; a zone rich in radiolaria and volcanic ash between 566-570 cm, angular stratification; volcanic ash laminae between 597-598 cm; 1 cm sedimentary clast at 558 cm, consisting primarily of volcanic ash detritus; between 580-626 cm, the unit is horizontally stratified; sharp, dipping contact.							
520								
560								


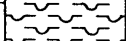
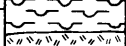
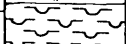
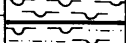
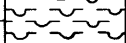
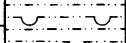
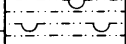




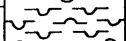

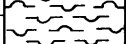
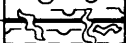

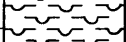

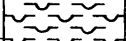



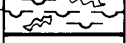













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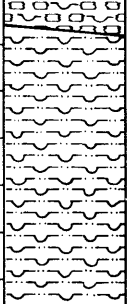
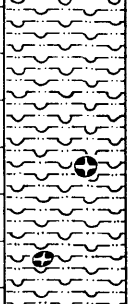
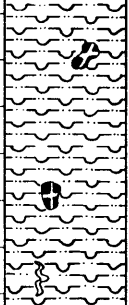
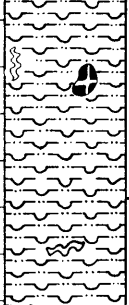
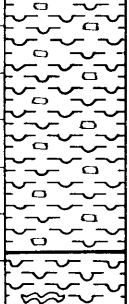
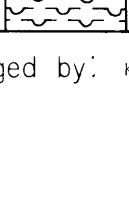
LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 46°57.8' S		CORR. DEPTH: 5196 M, 2792 FM			
			LONGITUDE: 14°18.2' E		CORE LENGTH: 1912 cm			
LITHOLOGIC DESCRIPTION								
560			CONTINUED					
			smear slides:	568 cm	575 cm	587 cm	612 cm	
			Quartz and Feldspar	6	3	5	6	
			Clay	15	15	13	10	
			Volcanic glass	2	2	<1	2	
			Diatoms	66	76	79	77	
			Radiolarians	10	4	2	3	
			Sponge spicules	<1	-	<1	<1	
			Silicoflagellates	1	<1	1	2	
600					626-663 cm: Diatomaceous mud, greenish gray (5G 6/1); 3 cm gravel at 630-633 cm; volcanic ash scattered throughout; horizontal stratification; gradational contact.			
			smear slide:	633 cm				
640			Quartz and Feldspar	10	Radiolarians	8		
			Clay	42	Sponge spicules	<1		
			Volcanic glass	2	Silicoflagellates	1		
			Diatoms	37				
			663-692 cm: Diatomaceous ooze, moderate yellowish brown (10YR 5/4), changing sharply to greenish gray (5G 6/1) at 683 cm; higher clay content at bottom part of unit; volcanic ash scattered between 683-687 cm; sharp, corrugated contact.					
680			smear slides:	676 cm	691 cm	676 cm	691 cm	
			Quartz and Feldspar	1	3	Diatoms	94	75
			Clay	3	15	Radiolarians	2	5
			Volcanic glass	<1	2	Sponge spicules	-	<1
			Micro-Mn nodules	-	<1	Silicoflagellates	<1	<1
			692-739 cm: Diatomaceous ooze, grayish yellow green (5GY 7/2); corrugated laminae of ash-bearing, radiolarian, diatomaceous ooze between 725-730 cm and 737-739 cm; sharp contact.					
720			smear slides:	699 cm	728 cm	699 cm	728 cm	
			Quartz and Feldspar	1	2	Diatoms	88	89
			Clay	10	7	Radiolarians	1	2
			Volcanic glass	<1	<1	Silicoflagellates	<1	<1
			739-873 cm: Diatomaceous ooze, light olive gray (5Y 6/1); sedimentary cast primarily filled with volcanic ash between 748-750 cm; bioturbations filled with radiolarian-bearing, volcanic ash between 750-753 cm; zone of radiolarian ooze between 750-756 cm; interspersed volcanic ash laminae throughout; volcanic ash scattered throughout; sharp contact.					
760			sedimentary cast					
			smear slides:	749 cm	770 cm	797 cm	847 cm	
			Quartz and Feldspar	4	5	3	3	
			Clay	5	5	5	10	
	Volcanic glass	82	1	2	<1			
	Diatoms	8	81	85	82			
	Radiolarians	1	8	5	4			
	Sponge spicules	-	<1	<1	<1			
	Silicoflagellates	<1	<1	<1	1			
800			873-900 cm: Diatomaceous mud, pale olive (10Y 6/2); top 10 cm (873-883 cm) has low clay content, and is almost entirely diatomaceous ooze; sharp contact.					
840			CONTINUED - NEXT PAGE					

Logged by: Kaharoeddin, Hattner, MacKenzie

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 46°57.8' S	CORR. DEPTH: 5106 M, 2792 FM
			LONGITUDE: 14°18.2' E	CORE LENGTH: 1012 cm
LITHOLOGIC DESCRIPTION				
840			CONTINUED	
			<u>smear slide:</u> 890 cm	
			Quartz and Feldspar 2	
			Clay 60	
			Volcanic glass <1	
880			Diatoms 35	
			Radiolarians 3	
			Sponge spicules <1	
			Silicoflagellates <1	
			900-919 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); sharp contact.	
			<u>smear slide:</u> 909 cm	
			Quartz and Feldspar 3	
			Clay 3	
920			Volcanic glass <1	
			Diatoms 90	
			Radiolarians 4	
			Sponge spicules <1	
			Silicoflagellates <1	
			919-952 cm: Radiolarian, diatomaceous ooze, greenish gray (5GY 6/1); sharp, bioturbated contact.	
			<u>smear slide:</u> 936 cm	
960			Quartz and Feldspar 15	
			Clay 5	
			Volcanic glass <1	
			Diatoms 57	
			Radiolarians 20	
			Sponge spicules 2	
			Silicoflagellates 1	
			952-1012 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); bioturbation between 952-960 cm and 997-1012 cm; 1 cm sedimentary clast at 997 cm.	
1000			<u>smear slide:</u> 976 cm	
			Quartz and Feldspar 1	
			Clay 5	
			Volcanic glass <1	
			Carbonate unspecified <1	
			Diatoms 91	
			Radiolarians 3	
			Sponge spicules <1	
			Silicoflagellates <1	
			Bottom topography: gently sloping; deep trough between two abyssal rises, 600 fm (1097 m) relief.	

Logged by: Kaharoeddin, Hattner, MacKenzie

ISLAS ORCADAS PC 1176-89

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 46°10.4' S	CORR. DEPTH: 4374 M, 2392 FM.	
			LONGITUDE: 14°39.9' E	CORE LENGTH: 1760 cm	
LITHOLOGIC DESCRIPTION					
50			0-6 cm: Diatomaceous, calcareous ooze, pale yellowish brown (10YR 6/2); ferromanganese oxide-stained laminae from 3-6 cm; sharp, tilted contact.		
			<u>smear slide:</u> <u>2 cm</u>		
			Clay 10		
			Volcanic glass 1		
			Carbonate unspecified 50		
			Foraminifera 2		
			Calcareous nannos 10		
			Diatoms 25		
			Radiolarians 2		
			Silicoflagellates <1		
<u>Percent Carbonate</u> (2-3 cm): 34.4					
100			6-271 cm: Muddy, diatomaceous ooze, grayish olive (10Y 4/2); volcanic ash scattered throughout; sedimentary clasts scattered between 102-240 cm; slightly bioturbated between 180-262 cm; gradational contact.		
			<u>smear slides:</u> <u>44 cm</u> <u>131 cm</u> <u>216 cm</u>		
			Quartz and Feldspar 5 5 5		
			Clay 40 30 30		
			Volcanic glass 2 2 2		
			Carbonate unspecified <1 <1 <1		
			Foraminifera - 1 <1		
			Diatoms 51 61 61		
			Radiolarians 2 1 2		
			Sponge spicules <1 <1 -		
Silicoflagellates <1 <1 <1					
150			271-328 cm: Calcareous, diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered throughout; sharp contact.		
			<u>smear slide:</u> <u>286 cm</u>		
			Quartz and Feldspar 2		
			Clay 10		
			Carbonate unspecified 25		
			Foraminifera 1		
			Calcareous nannos 5		
			Diatoms 55		
			Radiolarians 2		
			Silicoflagellates <1		
<u>Percent Carbonate</u> (286-287 cm): 15.1					
200			328-452 cm: Diatomaceous ooze, grayish olive (10Y 4/2); volcanic ash scattered throughout; slightly bioturbated between 328-344 cm; gradational contact.		
			<u>smear slide:</u> <u>367 cm</u>		
			Quartz and Feldspar 5		
			Clay 22		
			Volcanic glass 3		
			Micro-Mn nodules <1		
			Carbonate unspecified 3		
			Foraminifera <1		
			Diatoms 65		
			Radiolarians 1		
Silicoflagellates 1					
<u>Percent Carbonate</u> (367-368 cm): 2.6					
250			249		
300					
350					

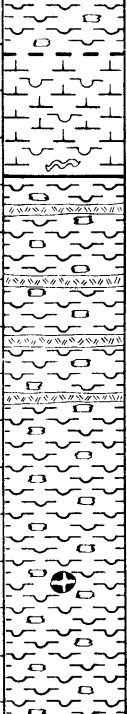
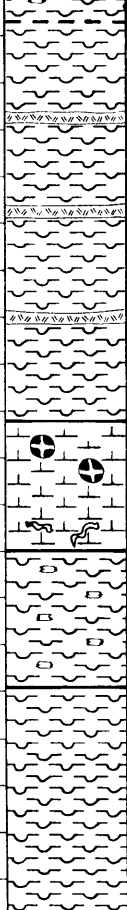
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Logged by: Kaharoeddin, Graves, Hattner, MacKenzie, Zemmels

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 46°10.4' S	CORR. DEPTH: 4374 M, 2392 FM.	
			LONGITUDE: 14°39.9' E	CORE LENGTH: 1760 cm	
LITHOLOGIC DESCRIPTION					
350			CONTINUED		
			452-523 cm: Calcareous, diatomaceous ooze, light olive gray (5Y 5/2); changes to medium gray (N5) at 464 cm; 3 mm gravel at 473 cm; slightly bioturbated between 464-523 cm; interspersed volcanic ash laminae between 452-489 cm; sharp contact.		
			<u>smear slides:</u>	<u>457 cm</u>	<u>495 cm</u>
			Quartz and Feldspar	5	1
			Clay	17	17
			Volcanic glass	2	1
			Carbonate unspecified	10	15
			Foraminifera	3	5
			Calcareous nannos	2	1
			Diatoms	59	55
400		Radiolarians	2	5	
		Sponge spicules	<1	<1	
		Silicoflagellates	<1	<1	
		<u>Percent Carbonate</u> (456-457 cm): 14.2 (495-496 cm): 12.0			
450			523-670 cm: Muddy, diatomaceous ooze, grayish olive (10Y 4/2); sedimentary clasts and volcanic ash scattered throughout, gradational contact.		
			<u>smear slides:</u>	<u>564 cm</u>	<u>636 cm</u>
			Quartz and Feldspar	5	3
			Clay	40	35
			Volcanic glass	2	1
			Carbonate unspecified	<1	-
			Calcareous nannos	-	<1
			Diatoms	48	55
			Radiolarians	5	6
			Sponge spicules	-	<1
500		Silicoflagellates	<1	<1	
			670-712 cm: Calcareous, diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered throughout; gradational contact.		
			<u>smear slide:</u>	<u>684 cm</u>	
			Quartz and Feldspar	1	
			Clay	27	
			Volcanic glass	1	
			Carbonate unspecified	15	
			Calcareous nannos	1	
			Diatoms	53	
			Radiolarians	2	
			Silicoflagellates	<1	
550		<u>Percent Carbonate</u> (683-684 cm): 10.7			
			712-738 cm: Diatomaceous, nannofossil ooze, light gray (N7); slightly bioturbated between 730-738 cm; sharp contact.		
			<u>smear slide:</u>	<u>725 cm</u>	
			Clay	17	
			Volcanic glass	1	
			Carbonate unspecified	5	
			Foraminifera	12	
			Calcareous nannos	40	
			Diatoms	25	
			Radiolarians	<1	
			Sponge spicules	<1	
600		Silicoflagellates	<1		
		<u>Percent Carbonate</u> (724-725 cm): 36.5			
650					
700					

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ISLAS ORCADAS PC 1176-89

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 46°10.4' S	CORR. DEPTH: 4374 M, 2392 FM,
			LONGITUDE: 14°39.9' E	CORE LENGTH: 1760 cm
LITHOLOGIC DESCRIPTION				
700			CONTINUED	
			738-857 cm: Calcareous-diatomaceous ooze, medium gray (N5); gradational change at 830 cm to pale yellowish brown (10YR 6/2); interspersed volcanic ash laminae between 738-790 cm; volcanic ash scattered between 810-853 cm; 1 cm sedimentary clast between 826-827 cm; gradational contact.	
			<u>smear slide:</u> <u>808 cm</u>	
			Quartz and Feldspar 3	
			Clay 23	
			Volcanic glass <1	
			Carbonate unspecified 15	
			Foraminifera 10	
			Calcareous nannos 5	
			Diatoms 40	
	Radiolarians 3			
	Sponge spicules 1			
	Silicoflagellates <1			
800			<u>Percent Carbonate</u> (808-809 cm): 2.4	
			857-942 cm: Diatomaceous ooze, light olive gray (5Y 5/2); interspersed volcanic ash laminae between 873-922 cm; scattered volcanic ash between 857-870 cm; sharp contact.	
			<u>smear slide:</u> <u>892 cm</u>	
			Quartz and Feldspar 5	
			Clay 20	
			Volcanic glass <1	
850			Carbonate unspecified 1	
			Diatoms 70	
			Radiolarians 3	
			Sponge spicules <1	
			Silicoflagellates 1	
			942-970 cm: Nannofossil ooze, light gray (N7); scattered sedimentary clasts between 942-954 cm; bioturbation between 960-970 cm; sharp contact.	
			<u>smear slide:</u> <u>959 cm</u>	
900			Quartz and Feldspar <1	
			Clay 12	
			Volcanic glass <1	
			Carbonate unspecified 10	
			Foraminifera 10	
			Calcareous nannos 50	
			Diatoms 15	
			Radiolarians 3	
			Sponge spicules <1	
			Silicoflagellates <1	
950			<u>Percent Carbonate</u> (958-959 cm): 39.4	
			970-999 cm: Calcareous, diatomaceous ooze, medium gray (N5); volcanic ash lightly scattered throughout; sharp contact.	
			<u>smear slide:</u> <u>995 cm</u>	
			Quartz and Feldspar 2	
			Clay 23	
			Volcanic glass 1	
			Carbonate unspecified 20	
1000			Foraminifera 1	
			Calcareous nannos 2	
			Diatoms 50	
			Radiolarians 1	
			Sponge spicules <1	
			Silicoflagellates <1	
			<u>Percent Carbonate</u> (995-996 cm): 16.3	
1050			CONTINUED - NEXT PAGE	

Logged by: Kaharoeddin, Graves, Hattner, MacKenzie, Zemmels

LENGTH (cm)	LITHOLOGY	DEFORMATION	LATITUDE: 46°10.4' S	CORR. DEPTH: 4374 M, 2392 FM.
			LONGITUDE: 14°39.9' E	CORE LENGTH: 1760 cm
LITHOLOGIC DESCRIPTION				
1050			CONTINUED	
			999-1661 cm: Diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered throughout; 1 cm sedimentary clast between 1533-1534 cm; interspersed volcanic ash laminae between 1623-1661 cm; gradational contact.	
			smear slides:	1072 cm 1189 cm 1345 cm 1517 cm 1629 cm
1150		1154	Quartz and Feldspar	4 2 1 3 3
			Clay	12 14 18 20 25
			Volcanic glass	1 1 2 <1 1
			Micro-Mn nodules	1 <1 <1 <1 <1
			Carbonate unspecified	5 1 <1 1 -
			Foraminifera	1 2 <1 - -
			Calcareous nannos	2 1 <<1 <1 <1
			Diatoms	73 76 75 73 64
			Radiolarians	1 3 2 3 5
			Sponge spicules	<1 - <1 - 1
			Silicoflagellates	<1 <1 2 <1 1
1250			Percent Carbonate (1189-1190 cm): 2.3 (1629-1630 cm): 2.3	
			1661-1700 cm: Diatomaceous mud, medium gray (N5); volcanic ash scattered throughout; sharp contact.	
			smear slide:	1696 cm
			Quartz and Feldspar	5
			Clay	55
			Volcanic glass	2
			Micro-Mn nodules	<1
1350			Carbonate unspecified	<1
			Diatoms	35
			Radiolarians	3
			Sponge spicules	<1
			Silicoflagellates	<1
			Percent Carbonate (1696-1697 cm): 2.3	
			1700-1760 cm: Diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash scattered throughout; flow-in from 1715 cm to core bottom.	
1450		1456	smear slide:	1714 cm
			Quartz and Feldspar	4
			Clay	12
			Volcanic glass	1
			Micro-Mn nodules	<1
			Calcareous nannos	<1
			Diatoms	82
			Radiolarians	1
			Silicoflagellates	<1
1550			Bottom topography: gently sloping; between low relief (less than 200 fm; 366 m) abyssal hills, north of African-Antarctic Ridge.	
1650				
1750		Flow in		

Logged by: Kaharoeddin, Graves, Hattner, MacKenzie, Zemmels

ISLAS ORCADAS CRUISE 1176

DESCRIPTIONS OF TRIGGER CORES AND TRIGGER CORE BAG SAMPLES

TC 1176-10

Latitude: 50°05.7'S
 Longitude: 41°06.5'W
 Water Depth: 1635 m
 Core Length: 6 cm

0-6 cm: Foraminiferal ooze, light olive gray (5Y 6/1); sediment disturbed (fell off table during splitting of the core).

<u>Smear Slide:</u>	<u>1 cm</u>
Quartz and Feldspar	5
Volcanic glass	1
Glauconite	2
Carbonate unspecified	4
Foraminifera	60
Calcareous nannofossils	20
Diatoms	4
Radiolarians	3
Sponge spicules	1
Silicoflagellates	<1

TC 1176-15

Latitude: 50°46.1'S
 Longitude: 37°09.2'W
 Water Depth: 4876 m
 Core Length: 46 cm (?)

0-46 cm: Muddy, diatomaceous ooze, greenish gray (5G 6/1), moderate olive brown (5Y 4/4). NOTE: Core cut into two sections aboard ship. Only the top section (28 cm) is considered to be reliable for purposes of sampling. The bottom section, although 40 cm in length, is completely filled with sediment in the lower 14 cm of the liner (which is disturbed; flow-in), whereas the upper 26 cm of this section contains only enough sediment, strung out along the core liner, to fill about one-fourth of the tube. Possibly, a parting gap in the sediment occurred, with water filling the void space and washing an original 4 cm interval of sediment into the void space; hence, a 46 cm core.

<u>Smear Slides:</u>	<u>15 cm</u>	<u>35 cm</u>
Quartz and Feldspar	20	10
Clay	31	39
Volcanic glass	2	1
Micro-Mn nodules	1	-
Diatoms	45	50
Radiolarians	1	<1
Sponge spicules	<1	<<1
Silicoflagellates	<<1	-

TC 1176-19

Latitude: 51°29.0'S
 Longitude: 33°21.7'W
 Water Depth: 1767 m
 Core Length: 38 cm

0-38 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); core is slightly washed along one side of liner between 4-38 cm. NOTE: Core cut into three sections aboard ship: 0-5 cm, 5-22 cm, 22-38 cm.

<u>Smear Slides:</u>	<u>2 cm</u>	<u>24 cm</u>
Quartz and Feldspar	10	5
Clay	5	10
Volcanic glass	<1	<1
Carbonate unspecified	4	6
Foraminifera	3	3
Diatoms	76	74
Radiolarians	1	<1
Sponge spicules	<1	-
Silicoflagellates	1	2

TC 1176-34

Latitude: 56°28.5'S
 Longitude: 21°58.8'W
 Water Depth: 4486 m
 Core Length: 20 cm

0-20 cm: Diatomaceous ooze, pale brown (5YR 5/2); volcanic ash scattered throughout.

<u>Smear</u>	<u>Slide:</u>	<u>10 cm</u>
Quartz and Feldspar		3
Clay		10
Volcanic glass		5
Carbonate unspecified		1
Diatoms		79
Radiolarians		1
Silicoflagellates		1

TC 1176-36

Latitude: 56°22.7'S
 Longitude: 16°59.7'W
 Water Depth: 4175 m
 Core Length: 18 cm

0-18 cm: Diatomaceous ooze, pale brown (5YR 5/2); zone of volcanic ash enrichment between 8-18 cm.

<u>Smear</u>	<u>Slide:</u>	<u>5 cm</u>
Quartz and Feldspar		2
Clay		3
Volcanic glass		3
Carbonate unspecified		<1
Diatoms		91
Radiolarians		1
Silicoflagellates		<1

TC 1176-41

Latitude: 56°04.9'S
 Longitude: 06°15.0'W
 Water Depth: 3773 m
 Core Length: 58 cm

0-39 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); 4 mm gravel scattered between 13-39 cm; slightly bioturbated between 8-16 cm; sharp contact.

39-58 cm: Diatomaceous ooze, dark yellowish brown (10YR 4/2) changing at 46 cm to yellowish gray (5Y 7/2); higher mud percentage between 39-45 cm.

<u>Smear</u>	<u>Slides:</u>	<u>11 cm</u>	<u>54 cm</u>
Quartz and Feldspar		1	2
Clay		43	5
Volcanic glass		5	5
Carbonate unspecified		7	-
Foraminifera		8	-
Diatoms		35	85
Radiolarians		1	2
Silicoflagellates		-	1

TC 1176-65

Latitude: 57°12.5'S
 Longitude: 08°12.4'E
 Water Depth: 5483 m
 Core Length: 55 cm

0-55 cm: Diatomaceous mud, light olive gray (5Y 5/2), dark yellowish brown (10YR 4/2).

<u>Smear</u>	<u>Slides:</u>	<u>16 cm</u>	<u>51 cm</u>
Quartz and Feldspar		1	1
Clay		47	60
Volcanic glass		5	3
Micro-Mn nodules		<1	<1
Carbonate unspecified		<1	<1
Diatoms		40	34
Radiolarians		7	2
Sponge spicules		<1	<1
Silicoflagellates		<1	<1

TC 1176-66

Latitude: 57°55.3'S
 Longitude: 08°59.0'E
 Water Depth: 4513 m
 Core Length: 51 cm

0-51 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2);
 4 mm gravel at 6 cm.

<u>Smear Slide:</u>	<u>28 cm</u>
Quartz and Feldspar	3
Clay	51
Volcanic glass	10
Carbonate unspecified	1
Diatoms	30
Radiolarians	5
Silicoflagellates	<1

TC 1176-67

Latitude: 57°02.6'S
 Longitude: 09°14.9'E
 Water Depth: 5274 m
 Core Length: 39 cm

0-39 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2);
 decreasing diatom content with depth; slightly bioturbated.

<u>Smear Slide:</u>	<u>16 cm</u>
Quartz and Feldspar	2
Clay	55
Volcanic glass	5
Micro-Mn nodules	1
Diatoms	36
Radiolarians	1
Sponge spicules	<1
Silicoflagellates	<1

TC 1176-68

Latitude: 56°11.2'S
 Longitude: 09°35.3'E
 Water Depth: 4830 m
 Core Length: 53 cm

0-18 cm: Diatomaceous ooze, dark yellowish brown (10YR 4/2);
 volcanic ash scattered throughout; sharp contact.

18-53 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2);
 volcanic ash scattered throughout.

<u>Smear Slides:</u>	<u>13 cm</u>	<u>35 cm</u>
Quartz and Feldspar	5	3
Clay	18	51
Volcanic glass	8	5
Micro-Mn nodules	-	<1
Zeolites	<1	-
Carbonate unspecified	-	1
Calcareous nannofossils	-	<1
Diatoms	65	35
Radiolarians	2	5
Sponge spicules	<1	-
Silicoflagellates	2	-

TC 1176-69

Latitude: 55°07.1'S
 Longitude: 09°56.9'E
 Water Depth: 4552 m
 Core Length: 68 cm

0-9 cm: Core cut into two sections aboard ship; 0-9 cm
 segment not received by Facility; presumed lost.

9-68 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2);
 zone of diatom enrichment between 33-39 cm.

<u>Smear Slide:</u>	<u>22 cm</u>
Quartz and Feldspar	5
Clay	65
Volcanic glass	10
Micro-Mn nodules	<1
Zeolites	<1
Carbonate unspecified	<<1
Calcareous nannofossils	<<1
Diatoms	20
Radiolarians	<1
Sponge spicules	<1
Silicoflagellates	<<1

TC 1176-71

Latitude: 54°31.2'S
 Longitude: 10°17.9'E
 Water Depth: 3809 m
 Core Length: 48 cm

0-16 cm: Diatomaceous ooze, dark yellowish brown (10YR 4/2); volcanic ash scattered throughout; slightly bioturbated; gradational contact.

16-48 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); mottling between 16-18 cm; volcanic ash scattered throughout; slightly bioturbated between 16-40 cm.

<u>Smear Slides:</u>	<u>5 cm</u>	<u>38 cm</u>
Quartz and Feldspar	2	4
Clay	20	39
Volcanic glass	8	20
Micro-Mn nodules	1	<1
Zeolites	<1	<1
Diatoms	65	35
Radiolarians	4	2
Sponge spicules	<1	<1
Silicoflagellates	<1	<<1

TC 1176-73

Latitude: 53°31.2'S
 Longitude: 10°49.1'E
 Water Depth: 3167 m
 Core Length: 31 cm

0-15 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2); slightly bioturbated; gradational contact.

15-31 cm: Foraminiferal ooze, yellowish gray (5Y 7/2); zone of diatom enrichment between 15-21 cm.

<u>Smear Slides:</u>	<u>6 cm</u>	<u>28 cm</u>
Quartz and Feldspar	2	2
Clay	2	15
Volcanic glass	10	5
Micro-Mn nodules	-	1
Carbonate unspecified	7	-
Foraminifera	3	65
Calcareous nannofossils	<<1	-
Diatoms	73	10
Radiolarians	2	2
Sponge spicules	<1	<<1
Silicoflagellates	1	<1

TC 1176-76

Latitude: 52°31.6'S
 Longitude: 11°34.3'E
 Water Depth: 3127 m
 Core Length: 20 cm

0-20 cm: Diatomaceous ooze, grayish orange (10YR 7/4).

<u>Smear Slide:</u>	<u>10 cm</u>
Quartz and Feldspar	2
Clay	1
Volcanic glass	3
Carbonate unspecified	1
Diatoms	89
Radiolarians	2
Silicoflagellates	2

TC 1176-78

Latitude: 51°45.5'S
 Longitude: 12°03.1'E
 Water Depth: 3974 m
 Core Length: Bag Sample
 (15.5 grams)

Diatomaceous ooze, dark yellowish brown (10YR 4/2).

<u>Smear Slide:</u>	
Quartz and Feldspar	4
Clay	<1
Volcanic glass	2
Carbonate unspecified	2
Diatoms	88
Radiolarians	2
Silicoflagellates	2

TC 1176-85

Latitude: 48°20.9'S
 Longitude: 13°45.7'E
 Water Depth: 4499 m
 Core Length: 29 cm

0-21 cm: Calcareous, diatomaceous ooze, yellowish gray (5Y 7/2); volcanic ash scattered throughout; slightly bioturbated; slightly washed between 0-12 cm; sharp contact.

21-29 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2); volcanic ash scattered throughout; gravel (to 5 mm) scattered throughout.

<u>Smear Slides:</u>	<u>15 cm</u>	<u>26 cm</u>
Quartz and Feldspar	1	3
Clay	15	20
Volcanic glass	2	10
Micro-Mn nodules	-	<1
Carbonate unspecified	15	<1
Foraminifera	17	<1
Calcareous nannofossils	5	-
Diatoms	40	57
Radiolarians	4	8
Sponge spicules	-	1
Silicoflagellates	1	1

TC 1176-86

Latitude: 48°02.6'S
 Longitude: 13°49.0'E
 Water Depth: 4338 m
 Core Length: 49 cm

0-7 cm: Calcareous, muddy, diatomaceous ooze, pale yellowish brown (10YR 6/2); gradational contact.

7-29 cm: Diatomaceous, calcareous ooze, very pale orange (10YR 8/2); slightly bioturbated; sharp contact.

29-36 cm: Calcareous, diatomaceous ooze, pale yellowish brown (10YR 6/2); moderately bioturbated; gradational contact.

36-49 cm: Diatomaceous, calcareous ooze, very pale orange (10YR 8/2).

<u>Smear Slides:</u>	<u>3 cm</u>	<u>20 cm</u>	<u>33 cm</u>	<u>45 cm</u>
Quartz and Feldspar	2	1	1	<1
Clay	30	4	5	1
Micro-Mn nodules	-	-	<<1	<<1
Carbonate unspecified	10	43	15	27
Foraminifera	15	15	5	25
Calcareous nannofossils	5	15	2	30
Diatoms	34	20	66	15
Radiolarians	3	2	5	2
Sponge spicules	1	<1	<1	<<1
Silicoflagellates	<1	<1	1	<1

TC 1176-87

Latitude: 47°29.5'S
 Longitude: 14°04.0'E
 Water Depth: 4843 m
 Core Length: Bag Sample
 (2.5 grams)

Gravel with occasional manganese oxide staining, dusky yellowish brown (10YR 2/2).

TC 1176-88

Latitude: 46°57.8'S
 Longitude: 14°18.2'E
 Water Depth: 5106 m
 Core Length: 24 cm

0-14 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); volcanic ash scattered throughout; angular gravel scattered throughout; sharp contact.

14-24 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); 1 cm angular gravel between 23-24 cm; moderately bioturbated.

<u>Smear Slides:</u>	<u>5 cm</u>	<u>19 cm</u>
Quartz and Feldspar	1	5
Clay	46	8
Volcanic glass	-	2
Micro-Mn nodules	<1	<1
Carbonate unspecified	2	-
Diatoms	50	74
Radiolarians	1	10
Sponge spicules	<<1	<1
Silicoflagellates	<1	1

TC 1176-89

Latitude: 46°10.4'S
Longitude: 14°39.9'E
Water Depth: 4374 m
Core Length: 28 cm

0-28 cm: Diatomaceous, calcareous ooze, pale yellowish brown (10YR 6/2); moderately bioturbated.

<u>Smear Slides:</u>	<u>4 cm</u>	<u>20 cm</u>
Quartz and Feldspar	1	<1
Clay	2	2
Micro-Mn nodules	-	<1
Carbonate unspecified	30	46
Foraminifera	15	25
Calcareous nannofossils	8	5
Diatoms	40	20
Radiolarians	4	2
Sponge spicules	<<1	-
Silicoflagellates	<1	<1

TC 1176-91

Latitude: 44°56.7'S
Longitude: 15°02.9'E
Water Depth: 4649 m
Core Length: 30 cm

0-30 cm: Calcareous ooze, pale yellowish brown (10YR 6/2); highly bioturbated.

<u>Smear Slide:</u>	<u>11 cm</u>
Quartz and Feldspar	1
Clay	2
Carbonate unspecified	47
Foraminifera	10
Calcareous nannofossils	30
Diatoms	10
Radiolarians	<1

Descriptions of trigger cores made by Eggers, Hattner, Kaharoeddin, Mackenzie, and Zemmels.

DESCRIPTIONS OF PISTON CORE BAG SAMPLES

Following are the descriptions of bagged samples from piston cores retrieved aboard ARA ISLAS ORCADAS Cruise 1176. Sediments recovered by a coring attempt, in addition to those within the core liner, often include the recovery of material lodged in the core cutter and/or the core catcher (C/C). In these cases, the sediment is placed in plastic bags. (Sediment recovery by piston core attempts 8, 11, 17, and 18 is limited solely to C/C retrieval.)

Cores from which both cutter and catcher sediments were obtained may be stored separately, or together in one bag. Core catcher sediment from a single core is sometimes stored in more than one bag.

All bagged sediments are described according to the criteria presented in this volume, and the sample weight of each bag has been recorded. (Refer to table 1, page 5, for corresponding station location data.)

- PC 1176-8 Washings from core cutter and catcher (3 grams): Glauconitic, foraminiferal, quartz sand, light olive gray (5Y 6/1); contains 60% quartz, feldspar and volcanic glass, 28% foraminifera, and 12% glauconite.
Percent Carbonate: 12.6
- PC 1176-9 Core cutter (180 grams): Nannofossil ooze, yellowish gray (5Y 8/1); contains volcanic ash.
Smear Slide:

Quartz and Feldspar	<1	Diatoms	2
Volcanic glass	<1	Radiolarians	5
Foraminifera	3	Sponge spicules	2
Calcareous nannos	88	Silicoflagellates	<<1

Percent Carbonate: 64.8
- PC 1176-10 Core catcher (12 grams; 295 grams): Diatomaceous, nannofossil ooze, yellowish gray (5Y 8/1); contains volcanic ash; sample contained in two bags.
Smear Slide:

Quartz and Feldspar	<1	Calcareous nannos	76
Clay	2	Diatoms	18
Volcanic glass	1	Radiolarians	<1
Carbonate unspecified	3	Sponge spicules	<1
Foraminifera	<1		

Percent Carbonate: 70.7
- PC 1176-11 Core cutter (6 grams), core catcher (650 grams): Muddy sand, light olive brown (5Y 5/6); contains less than 5% angular gravel of basaltic composition; highly indurated. NOTE: Smear slide prepared using fine fraction only.
Smear Slide:

Quartz and Feldspar	30	Diatoms	20
Clay	35	Radiolarians	7
Volcanic glass	3	Sponge spicules	3
Calcareous nannos	2	Silicoflagellates	<1
- PC 1176-12 Core cutter (143 grams): Diatomaceous mud, dusky yellow (5Y 6/4); contains volcanic ash.
Smear Slide:

Quartz and Feldspar	10	Radiolarians	5
Clay	45	Sponge spicules	2
Diatoms	35	Silicoflagellates	3
- PC 1176-13 Core cutter (5 grams): Diatomaceous, sandy mud, yellowish gray (5Y 7/2); sample contains 2.5 cm sponge fragment.
Smear Slide:

Quartz and Feldspar	45	Diatoms	15
Clay	20	Radiolarians	5
Volcanic glass	5	Sponge spicules	2
Glauconite	8		
- PC 1176-15 Core catcher (64 grams): Diatomaceous ooze, light olive gray (5Y 5/2); contains volcanic ash.
Smear Slide:

Quartz and Feldspar	10	Diatoms	76
Clay	5	Radiolarians	3
Volcanic glass	5	Sponge spicules	<1
Micro-Mn nodules	1	Silicoflagellates	<1
- PC 1176-16 Core catcher (103 grams): Diatomaceous, sandy mud, light olive gray (5Y 5/2); contains ferromanganese oxide-coated gravel (basalt, scoria; to 1 cm).
Smear Slide:

Quartz and Feldspar	25	Diatoms	20
Clay	41	Radiolarians	2
Volcanic glass	1	Sponge spicules	1
Micro-Mn nodules	10	Silicoflagellates	<1

<u>PC 1176-17</u>	Core cutter (81 grams): Glauconitic, sandy, diatomaceous ooze, light olive gray (5Y 5/2); contains angular to sub-rounded gravel (basalt) up to 1 cm.			
<u>Smear Slide:</u>	Quartz and Feldspar	25	Foraminifera	5
	Clay	3	Diatoms	39
	Volcanic glass	5	Radiolarians	8
	Glauconite	10	Sponge spicules	<1
	Micro-Mn nodules	<1	Silicoflagellates	<1
	Carbonate unspecified	5		
<u>PC 1176-18</u>	Core cutter (251 grams): Sandy, diatomaceous mud, light olive gray (5Y 5/2); contains gravel up to 1 cm (basalt, granite, sandstone); contains volcanic ash.			
<u>Smear Slide:</u>	Quartz and Feldspar	20	Diatoms	29
	Clay	40	Radiolarians	5
	Volcanic glass	5	Sponge spicules	1
<u>PC 1176-19</u>	Core cutter/catcher(?) (19 grams): Muddy, diatomaceous ooze, yellowish gray (5Y 8/1); contains volcanic ash.			
<u>Smear Slide:</u>	Quartz and Feldspar	30	Diatoms	40
	Clay	15	Radiolarians	6
	Volcanic glass	5	Sponge spicules	1
	Micro-Mn nodules	2	Silicoflagellates	1
<u>PC 1176-21</u>	Core catcher (155 grams): Diatomaceous ooze, yellowish gray (5Y 7/2).			
<u>Smear Slide:</u>	Quartz and Feldspar	2	Radiolarians	2
	Clay	<1	Sponge spicules	<1
	Micro-Mn nodules	<1	Silicoflagellates	8
	Diatoms	88		
<u>PC 1176-25</u>	Core cutter and catcher (510 grams): Diatomaceous, sandy mud, light olive gray (5Y 5/2); contains angular to sub-rounded gravel (basalt, siltstone, scoria) up to 1.5 cm; bag sample includes one 3 cm fragment of plastic core liner.			
<u>Smear Slide:</u>	Quartz and Feldspar	45	Diatoms	19
	Clay	20	Radiolarians	8
	Volcanic glass	3	Sponge spicules	2
	Glauconite	3		
<u>PC 1176-34</u>	Core catcher (195 grams; 47 grams): Ash-bearing, diatomaceous ooze, olive gray (5Y 3/2); contains volcanic ash; sample contained in two bags.			
<u>Smear Slide:</u>	Quartz and Feldspar	5	Diatoms	72
	Clay	3	Radiolarians	3
	Volcanic glass	15	Silicoflagellates	2
<u>PC 1176-36</u>	Core cutter (149 grams): Muddy, diatomaceous ooze, light olive gray (5Y 5/2); contains volcanic ash.			
<u>Smear Slide:</u>	Quartz and Feldspar	5	Calcareous nannos	<1
	Clay	35	Diatoms	52
	Volcanic glass	3	Radiolarians	1
	Micro-Mn nodules	2	Sponge spicules	<<1
	Carbonate unspecified	2	Silicoflagellates	<<1
<u>PC 1176-38</u>	Core cutter (53 grams): Diatomaceous ooze, light olive gray (5Y 5/2); contains volcanic ash.			
<u>Smear Slide:</u>	Quartz and Feldspar	15	Diatoms	65
	Clay	5	Radiolarians	3
	Volcanic glass	12	Silicoflagellates	<1
<u>PC 1176-39</u>	Core cutter (126 grams): Diatomaceous ooze, dark yellowish brown (10YR 4/2); contains volcanic ash; slightly stained with ferromanganese oxide.			
<u>Smear Slide:</u>	Quartz and Feldspar	10	Diatoms	77
	Clay	5	Radiolarians	1
	Volcanic glass	7	Silicoflagellates	<<1

<u>PC 1176-41</u>	Core catcher (56 grams): Diatomaceous, foraminiferal ooze, yellowish gray (5Y 7/2); contains volcanic ash, stained with ferromanganese oxide.			
<u>Smear Slide:</u>	Quartz and Feldspar	2	Foraminifera	40
	Clay	5	Calcareous nannos	<1
	Volcanic glass	5	Diatoms	20
	Micro-Mn nodules	<1	Radiolarians	2
	Carbonate unspecified	26		
	<u>Percent Carbonate:</u> 68.0			
<u>PC 1176-52</u>	Core catcher (172 grams): Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); contains volcanic ash.			
<u>Smear Slide:</u>	Quartz and Feldspar	10	Radiolarians	7
	Clay	30	Sponge spicules	<1
	Volcanic glass	10	Silicoflagellates	<1
	Diatoms	43		
<u>PC 1176-53</u>	Core catcher (4 grams): Diatomaceous ooze, very pale orange (10YR 8/2); slightly stained with ferromanganese oxide.			
<u>Smear Slide:</u>	Quartz and Feldspar	<1	Diatoms	90
	Clay	<1	Radiolarians	1
	Carbonate unspecified	8	Silicoflagellates	<1
	Foraminifera	1		
	<u>Percent Carbonate:</u> 10.2			
<u>PC 1176-54</u>	Core catcher (20 grams): Diatomaceous ooze, very pale orange (10YR 8/2); slightly stained with ferromanganese oxide.			
<u>Smear Slide:</u>	Quartz and Feldspar	2	Diatoms	81
	Clay	2	Radiolarians	2
	Carbonate unspecified	5	Sponge spicules	<<1
	Foraminifera	8	Silicoflagellates	<1
	<u>Percent Carbonate:</u> 7.7			
<u>PC 1176-55</u>	Core catcher (87 grams): Diatomaceous ooze, light olive gray (5Y 5/2); contains volcanic ash.			
<u>Smear Slide:</u>	Quartz and Feldspar	15	Diatoms	61
	Clay	10	Radiolarians	3
	Volcanic glass	10	Sponge spicules	<1
	Carbonate unspecified	<1	Silicoflagellates	<1
	Foraminifera	1		
<u>PC 1176-64</u>	Core cutter (179 grams), core catcher (62 grams): Pelagic clay, pale yellowish brown (10YR 6/2).			
<u>Smear Slide:</u>	Quartz and Feldspar	4	Diatoms	5
	Clay	88	Radiolarians	1
	Volcanic glass	1	Sponge spicules	<1
	Micro-Mn nodules	1	Silicoflagellates	<1
<u>PC 1176-65</u>	Core catcher (181 grams): Diatomaceous mud, dark yellowish brown (10YR 4/2); slightly stained with ferromanganese oxide.			
<u>Smear Slide:</u>	Quartz and Feldspar	2	Radiolarians	5
	Clay	59	Sponge spicules	<1
	Volcanic glass	4	Silicoflagellates	<1
	Diatoms	30		

- PC 1176-66 Core catcher (261 grams): Diatomaceous mud, dark yellowish brown (10YR 4/2); slightly stained with ferromanganese oxide.
- | | | | | |
|---------------------|---------------------|----|-------------------|----|
| <u>Smear Slide:</u> | Quartz and Feldspar | 5 | Diatoms | 30 |
| | Clay | 54 | Radiolarians | 10 |
| | Volcanic glass | <1 | Sponge spicules | <1 |
| | Micro-Mn nodules | 1 | Silicoflagellates | <1 |
- PC 1176-67 Core catcher (96 grams): Pelagic clay, dark yellowish brown (10YR 4/2); slightly stained with ferromanganese oxide.
- | | | | | |
|---------------------|---------------------|----|-------------------|----|
| <u>Smear Slide:</u> | Quartz and Feldspar | 1 | Diatoms | 10 |
| | Clay | 86 | Radiolarians | 1 |
| | Volcanic glass | <1 | Sponge spicules | <1 |
| | Micro-Mn nodules | 2 | Silicoflagellates | <1 |
- PC 1176-68 Core catcher (80 grams): Diatomaceous ooze, pale yellowish brown (10YR 6/2); slightly stained with ferromanganese oxide.
- | | | | | |
|---------------------|---------------------|----|-------------------|----|
| <u>Smear Slide:</u> | Quartz and Feldspar | 4 | Diatoms | 74 |
| | Clay | 20 | Radiolarians | 1 |
| | Micro-Mn nodules | <1 | Silicoflagellates | 1 |
- PC 1176-69 Core catcher (51 grams): Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); contains volcanic ash; stained with ferromanganese oxide.
- | | | | | |
|---------------------|---------------------|----|-------------------|----|
| <u>Smear Slide:</u> | Quartz and Feldspar | 15 | Diatoms | 40 |
| | Clay | 24 | Radiolarians | 3 |
| | Volcanic glass | 10 | Sponge spicules | 2 |
| | Micro-Mn nodules | 6 | Silicoflagellates | <1 |
- PC 1176-70 Core catcher (276 grams): Diatomaceous ooze, yellowish gray (5Y 7/2).
- | | | | | |
|---------------------|---------------------|----|-------------------|----|
| <u>Smear Slide:</u> | Quartz and Feldspar | 2 | Diatoms | 81 |
| | Clay | 15 | Radiolarians | 2 |
| | Volcanic glass | <1 | Silicoflagellates | <1 |
| | Micro-Mn nodules | <1 | | |
- PC 1176-71 Core catcher (373 grams): Diatomaceous ooze, yellowish gray (5Y 7/2); contains volcanic ash; stained with ferromanganese oxide.
- | | | | | |
|---------------------|-----------------------|----|-------------------|----|
| <u>Smear Slide:</u> | Quartz and Feldspar | 8 | Foraminifera | <1 |
| | Clay | 18 | Diatoms | 65 |
| | Volcanic glass | 4 | Radiolarians | 3 |
| | Micro-Mn nodules | 1 | Sponge spicules | <1 |
| | Carbonate unspecified | 1 | Silicoflagellates | <1 |
- PC 1176-73 Core catcher (122 grams): Diatomaceous ooze, yellowish gray (5Y 7/2); stained with ferromanganese oxide; contains volcanic ash.
- | | | | | |
|---------------------|-----------------------|----|-------------------|----|
| <u>Smear Slide:</u> | Quartz and Feldspar | 1 | Diatoms | 85 |
| | Clay | 5 | Radiolarians | 2 |
| | Volcanic glass | 1 | Sponge spicules | <1 |
| | Micro-Mn nodules | <1 | Silicoflagellates | 5 |
| | Carbonate unspecified | 1 | | |
- PC 1176-76 Core catcher (40 grams; 180 grams): Ash-bearing gravel, light olive gray (5Y 5/2); coarse fraction consists of basic and ultra-basic igneous and metamorphic fragments (to 4 cm) slightly coated with ferromanganese oxide; sample contained in two bags. NOTE: Smear slide prepared using fine fraction only.
- | | | | | |
|---------------------|---------------------|----|-----------------------|----|
| <u>Smear Slide:</u> | Quartz and Feldspar | 10 | Carbonate unspecified | 3 |
| | Clay | 19 | Foraminifera | 1 |
| | Volcanic glass | 35 | Diatoms | 25 |
| | Micro-Mn nodules | 4 | Radiolarians | 3 |
| | Zeolites | <1 | Silicoflagellates | <1 |
- PC 1176-78 Core catcher (41 grams): Gravel; consists primarily of subangular volcanic ejecta, median diameter about 3 mm; about 1% fine fraction, consisting of fine, quartz sand, volcanic glass, and diatoms.

PC 1176-79

Core catcher (76 grams): Diatomaceous ooze, pale yellowish brown (10YR 6/2); contains volcanic ash; slightly stained with ferromanganese oxide.

<u>Smear Slide:</u>	Quartz and Feldspar	1	Foraminifera	<1
	Clay	5	Calcareous nannos	<1
	Volcanic glass	1	Diatoms	83
	Micro-Mn nodules	<1	Radiolarians	1
	Carbonate unspecified	7	Silicoflagellates	2

Percent Carbonate 2.3

PC 1176-81

Core catcher (1 gram): Diatomaceous ooze, yellowish gray (5Y 7/2); contains volcanic ash.

<u>Smear Slide:</u>	Quartz and Feldspar	3	Carbonate unspecified	<1
	Clay	5	Diatoms	88
	Volcanic glass	2	Radiolarians	2
	Micro-Mn nodules	<1	Silicoflagellates	<1

PC 1176-82

Core catcher (133 grams): Diatomaceous ooze, yellowish gray (5Y 7/2); contains volcanic ash; slightly stained with ferromanganese oxide.

<u>Smear Slide:</u>	Quartz and Feldspar	1	Foraminifera	3
	Clay	3	Calcareous nannos	<1
	Volcanic glass	<1	Diatoms	84
	Micro-Mn nodules	<1	Radiolarians	1
	Carbonate unspecified	7	Silicoflagellates	1

PC 1176-83

Core catcher (37 grams): Diatomaceous ooze, light olive gray (5Y 5/2); contains volcanic ash.

<u>Smear Slide:</u>	Quartz and Feldspar	3	Diatoms	83
	Clay	2	Radiolarians	1
	Volcanic glass	1	Sponge spicules	<1
	Micro-Mn nodules	<1	Silicoflagellates	<1
	Carbonate unspecified	10		

PC 1176-85

Core catcher (231 grams): Diatomaceous ooze, yellowish gray (5Y 7/2); contains volcanic ash.

<u>Smear Slide:</u>	Quartz and Feldspar	1	Carbonate unspecified	7
	Clay	2	Diatoms	85
	Volcanic glass	<1	Radiolarians	5
	Micro-Mn nodules	<1	Silicoflagellates	<1

PC 1176-86

Core catcher (50 grams): Diatomaceous ooze, yellowish gray (5Y 7/2); contains volcanic ash.

<u>Smear Slide:</u>	Quartz and Feldspar	2	Foraminifera	<<1
	Clay	3	Calcareous nannos	<1
	Volcanic glass	2	Diatoms	83
	Micro-Mn nodules	<1	Radiolarians	5
	Carbonate unspecified	5	Silicoflagellates	<1

PC 1176-87

Core catcher (265 grams; 3 grams): Diatomaceous ooze, light olive gray (5Y 5/2); contains volcanic ash; sample contained in two bags.

<u>Smear Slide:</u>	Quartz and Feldspar	1	Carbonate unspecified	3
	Clay	10	Diatoms	81
	Volcanic glass	<1	Radiolarians	3
	Micro-Mn nodules	2	Silicoflagellates	<1

PC 1176-88

Core catcher (81 grams): Diatomaceous ooze, dark yellowish brown (10YR 4/2); slightly stained with ferromanganese oxide.

<u>Smear Slide:</u>	Quartz and Feldspar	8	Diatoms	60
	Clay	16	Radiolarians	7
	Volcanic glass	3	Sponge spicules	<1
	Carbonate unspecified	5	Silicoflagellates	1

PC 1176-89 Core catcher (118 grams; 126 grams): Diatomaceous ooze, light olive gray (5Y 5/2).

<u>Smear Slide:</u>	Quartz and Feldspar	2	Calcareous nannos	<1
	Clay	25	Diatoms	63
	Volcanic glass	<1	Radiolarians	4
	Micro-Mn nodules	<1	Sponge spicules	<1
	Carbonate unspecified	6	Silicoflagellates	<1

PC 1176-90 Core cutter (117 grams), core catcher (134 grams): Zeolitic clay, dark yellowish brown (10YR 4/2); slightly stained with ferromanganese oxide.

<u>Smear Slide:</u>	Quartz and Feldspar	5	Zeolites	35
	Clay	55	Carbonate unspecified	<1
	Volcanic glass	3	Diatoms	1
	Micro-Mn nodules	1		

PC 1176-91 Core catcher (295 grams): Muddy, diatomaceous ooze, light olive gray (5Y 5/2).

<u>Smear Slide:</u>	Quartz and Feldspar	6	Foraminifera	<1
	Clay	30	Diatoms	55
	Volcanic glass	<1	Radiolarians	5
	Micro-Mn nodules	2	Sponge spicules	<1
	Carbonate unspecified	1	Silicoflagellates	1

Descriptions made by Eggers, Graves, and Kaharoeddin.

APPENDIX

ISLAS ORCADAS CRUISE 0775
ADDITIONAL TRIGGER CORE DESCRIPTIONS

Of those trigger cores recovered aboard cruise 0775 of ISLAS ORCADAS, descriptions of 11 of them were unable to be presented in the volume of core descriptions for that cruise (see Cassidy et al., 1977b) due to special handling and sampling requirements of a principal investigator. These descriptions are now complete and are reproduced herein, together with the core location map and table of station location data for the cruise. Methods of description follow the slightly revised format of descriptive criteria used in this volume.

It was originally intended to also include in this appendix the descriptions of two piston cores (PC 0775-9 and 20) whose descriptions did not appear in the previous volume, and for the same reason. Unfortunately, antiseptic sampling needs for organic geochemical studies required that these cores, stored frozen, be cut into a considerable number of short sections and shipped, also frozen, to NASA-Ames for further investigation under sterile, "clean-room" conditions. Failure of the curator to thus far successfully negotiate the return of the unused material renders it impossible to present any descriptive data at this time. It is doubtful that these two cores, if and when they are returned, will be of much use to investigators requiring precise stratigraphic control of selected sample intervals.

ISLAS ORCADAS CRUISE 0775

DESCRIPTIONS OF TRIGGER CORES

TC 0775-8

Latitude: 47°46.2'S
 Longitude: 29°28.5'W
 Water Depth: 4712 m
 Core Length: 50 cm

0-50 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2), light olive gray (5Y 5/2); volcanic ash scattered throughout; increasing mud content with depth; slightly washed between 15-50 cm.

<u>Smear Slides:</u>	<u>6 cm</u>	<u>31 cm</u>
Quartz and Feldspar	25	35
Clay	34	30
Volcanic glass	7	5
Micro-Mn nodules	1	3
Carbonate unspecified	<1	-
Diatoms	30	24
Radiolarians	2	3
Sponge spicules	1	<1
Silicoflagellates	<1	<1

TC 0775-9

Latitude: 47°51.3'S
 Longitude: 29°10.0'W
 Water Depth: 4535 m
 Core Length: 42 cm

0-42 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2), light olive gray (5Y 5/2); volcanic ash scattered throughout; increasing diatom content with depth; slightly washed between 27-42 cm.

<u>Smear Slides:</u>	<u>3 cm</u>	<u>23 cm</u>
Quartz and Feldspar	35	20
Clay	36	35
Volcanic glass	5	3
Micro-Mn nodules	-	1
Diatoms	20	40
Radiolarians	3	1
Sponge spicules	1	<1
Silicoflagellates	<1	<1

TC 0775-11

Latitude: 49°58.8'S
 Longitude: 25°54.9'W
 Water Depth: 4610 m
 Core Length: 28 cm

0-28 cm: Diatomaceous ooze, light olive gray (5Y 5/2); ferromanganese oxide staining between 5-7 cm and 16-17 cm; volcanic ash scattered throughout; 2 cm angular gravel (siltstone) between 25-27 cm; increasing silt content with depth; unit is slightly washed between 16-28 cm.

<u>Smear Slides:</u>	<u>3 cm</u>	<u>22 cm</u>
Quartz and Feldspar	3	15
Clay	1	5
Volcanic glass	1	2
Micro-Mn nodules	-	2
Carbonate unspecified	-	<<1
Diatoms	90	75
Radiolarians	3	1
Sponge spicules	1	<1
Silicoflagellates	1	<1

TC 0775-16

Latitude: 50°36.5'S
 Longitude: 31°46.0'W
 Water Depth: 4440 m
 Core Length: 12 cm

0-12 cm: Diatomaceous ooze, light olive gray (5Y 5/2);
 2.5 cm subrounded gravel with manganese oxide coating
 between 1-4 cm; volcanic ash scattered throughout.

<u>Smear Slide:</u>	<u>3 cm</u>
Quartz and Feldspar	20
Clay	5
Volcanic glass	4
Diatoms	61
Radiolarians	7
Sponge spicules	1
Silicoflagellates	2

TC 0775-17

Latitude: 50°58.1'S
 Longitude: 24°39.9'W
 Water Depth: 4139 m
 Core Length: 22 cm

0-22 cm: Muddy, diatomaceous ooze, dark yellowish brown
 (10YR 4/2); volcanic ash scattered throughout; higher
 concentrations of ash between 9-13 cm and 15-17 cm;
 slightly bioturbated between 17-22 cm.

<u>Smear Slide:</u>	<u>7 cm</u>
Quartz and Feldspar	25
Clay	15
Volcanic glass	5
Micro-Mn nodules	<1
Diatoms	51
Radiolarians	3
Sponge spicules	<1
Silicoflagellates	1

TC 0775-18

Latitude: 51°36.9'S
 Longitude: 27°24.0'W
 Water Depth: 4194 m
 Core Length: 39 cm

0-17 cm: Diatomaceous ooze, dark yellowish brown (10YR 4/2);
 volcanic ash scattered throughout; unit is slightly
 bioturbated; sharp contact.

17-39 cm: Muddy, diatomaceous ooze, light olive gray (5Y 5/2);
 volcanic ash scattered throughout; higher concentrations
 of ash between 17-27 cm and 32-34 cm; 2.5 cm angular gravel
 (siltstone) between 23-26 cm; gravel (ferromanganese oxide
 stained igneous, siltstone, scoria) up to 1 cm between
 18-27 cm.

<u>Smear Slides:</u>	<u>9 cm</u>	<u>29 cm</u>
Quartz and Feldspar	10	20
Clay	5	15
Volcanic glass	5	2
Micro-Mn nodules	-	<1
Diatoms	74	59
Radiolarians	5	4
Sponge spicules	-	<1
Silicoflagellates	1	<1

TC 0775-20

Latitude: 52°30.4'S
 Longitude: 31°49.5'W
 Water Depth: 3395 m
 Core Length: 20 cm

0-6 cm: Diatomaceous ooze, dark yellowish brown (10YR 4/2);
 volcanic ash scattered throughout; gradational contact.

6-20 cm: Muddy, diatomaceous ooze, light olive gray (5Y 5/2);
 volcanic ash scattered throughout; slightly bioturbated
 between 14-20 cm.

<u>Smear Slides:</u>	<u>4 cm</u>	<u>14 cm</u>
Quartz and Feldspar	20	30
Clay	5	5
Volcanic glass	5	5
Micro-Mn nodules	<1	-
Diatoms	65	55
Radiolarians	4	3
Sponge spicules	<1	1
Silicoflagellates	<1	1

TC 0775-21

Latitude: 52°35.5'S
Longitude: 27°16.4'W
Water Depth: 4639 m
Core Length: 24 cm

0-24 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); volcanic ash scattered throughout; higher ash concentrations between 11-16 cm and 21-23 cm; ferromanganese oxide coated shale fragments up to 1 cm scattered throughout; 2.5 cm ferromanganese coated shale between 13-16 cm, brownish black (5YR 2/1); 2 cm sub-angular gravel between 14-16 cm.

<u>Smear Slide:</u>	<u>4 cm</u>
Quartz and Feldspar	35
Clay	3
Volcanic glass	4
Diatoms	56
Radiolarians	2
Sponge spicules	<1
Silicoflagellates	<1

TC 0775-25

Latitude: 56°34.7'S
Longitude: 20°17.2'W
Water Depth: 5014 m
Core Length: 22 cm

0-22 cm: Diatomaceous ooze, dusky yellowish brown (10YR 2/2), and light olive gray (5Y 5/2); heavy staining of ferromanganese oxide between 0-3 cm; moderate staining of ferromanganese oxide between 3-8 cm; moderately bioturbated between 0-10 cm.

<u>Smear Slides:</u>	<u>4 cm</u>	<u>18 cm</u>
Quartz and Feldspar	2	2
Clay	2	1
Volcanic glass	5	4
Diatoms	87	90
Radiolarians	3	2
Sponge spicules	-	<1
Silicoflagellates	1	1

TC 0775-27

Latitude: 57°02.7'S
Longitude: 23°34.3'W
Water Depth: 5020 m
Core Length: 34 cm

0-34 cm: Diatomaceous ooze, light olive gray (5Y 5/2), and dusky yellowish brown (10YR 2/2); highly stained with ferromanganese oxide between 0-4 cm and 6-8 cm; volcanic ash scattered throughout; increasing silt content with depth; slightly bioturbated throughout; washed slightly along side of core liner between 0-15 cm.

<u>Smear Slides:</u>	<u>7 cm</u>	<u>30 cm</u>
Quartz and Feldspar	5	12
Clay	2	2
Volcanic glass	3	10
Diatoms	87	74
Radiolarians	2	2
Silicoflagellates	<1	<1

TC 0775-29

Latitude: 57°11.6'S
 Longitude: 25°29.6'W
 Water Depth: 3504 m
 Core Length: 14 cm

0-14 cm: Diatomaceous ooze, dark yellowish brown (10YR 4/2);
 slight ferromanganese oxide staining throughout; volcanic
 ash scattered throughout; unit is washed.

Smear Slide:7 cm

Quartz and Feldspar	15
Clay	4
Volcanic glass	12
Diatoms	69
Radiolarians	<1
Silicoflagellates	<1

Descriptions made by Eggers, Kaharoeddin, and Hattner.

TABLE 3

STATION LOCATIONS, CORRESPONDING WATER DEPTHS, AND CORE
RECOVERY FOR ARA ISLAS ORCADAS CRUISE 0775

Core and Ship Station Number ₁	Latitude(S)	Longitude(W)	Water Depth(m)	Core Length(cm):	
				PC	TC
0(1) ₂	37°13.1'	54°23.2'	445	489*	NR
1	49°40.9'	40°23.6'	2090	52	NR
2	49°27.3'	39°37.6'	3336	1111	NR
3	49°23.9'	39°12.9'	3299	BAG	NR
4	47°49.1'	37°02.3'	5616	1142	56
5	48°51.2'	36°33.3'	4895	1169	54
6	48°42.2'	35°03.6'	5087	1009	54
7	47°57.4'	34°59.6'	5298	1130	55
8	47°46.2'	29°28.5'	4712	BAG	50*
9	47°51.3'	29°10.0'	4535	1129*	44*
11	49°58.8'	25°54.9'	4610	1667	30*
12	49°29.9'	33°58.6'	5080	1096	37
13	49°31.1'	34°58.2'	4967	1058	34
14	48°48.1'	35°37.6'	4989	187	BAG
15	49°31.4'	36°02.2'	4707	698	33
16	50°36.5'	31°46.0'	4440	1691	12*
17	50°58.1'	24°39.9'	4139	1132	22*
18	51°36.9'	27°24.0'	4194	567	40*
20	52°30.4'	31°49.5'	3395	1174*	21*
21	52°35.5'	27°16.4'	4639	1082	24*
25	56°34.7'	20°17.2'	5014	1149	23*
27	57°02.7'	23°34.3'	5020	1110	36*
29	57°11.6'	25°29.6'	3504	20	15*
30 ₃	56°48.5'	29°49.2'	3272	DREDGE	
32	56°14.0'	30°36.1'	2933	584	21
33	55°11.6'	30°26.4'	4623	256	28
34	55°08.2'	31°05.5'	5073	540	22
37	52°41.3'	42°05.9'	2782	1009	7
38	52°25.8'	42°10.5'	3603	1139	BAG
39	51°58.4'	42°21.7'	2694	BAG	NR
40	50°18.2'	43°25.0'	1605	445	25
41	50°00.7'	43°34.7'	2189	BAG	NR
42	49°52.1'	43°37.8'	2621	54	21
43	50°13.2'	44°08.8'	1713	853	28
44	50°18.5'	44°31.7'	1651	688	26
45	50°25.0'	44°52.4'	1621	477	NR
46	50°27.8'	44°57.2'	1599	305	NR
47	50°32.9'	45°18.4'	1517	282	NR
48	50°38.5'	46°04.7'	1493	394	BAG
49	50°44.1'	46°20.2'	1784	467	23
50	50°51.5'	46°46.1'	2344	161	NR
51	50°57.3'	47°02.1'	2547	66	BAG
52	50°54.7'	46°50.0'	2558	135	NR
53	50°52.0'	46°36.6'	2229	191	50
54	50°36.0'	46°23.1'	1856	367	BAG
55	50°38.0'	46°39.1'	2255	345	BAG
56	50°35.0'	47°27.2'	2637	10	NR
57	50°34.9'	47°30.7'	2525	66	BAG

₁Omitted station numbers are for stations at which there was no core recovery, or were STD stations only (Warnke, *et al.*, 1976).

₂Piston core 0(1) retained by Argentina.

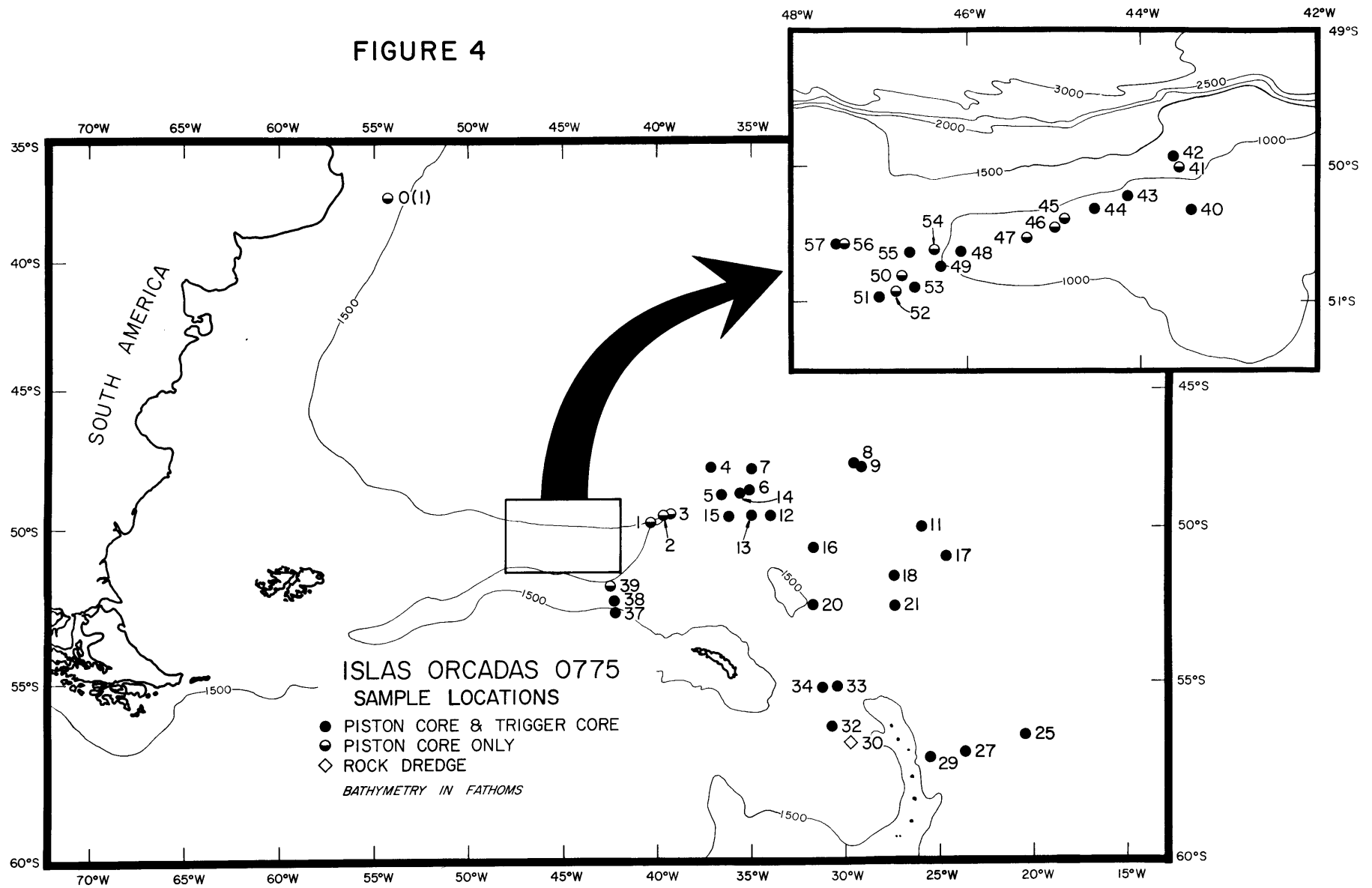
₃Dredge station.

*Undescribed core length.

NR = No Recovery BAG = Bag Sample (see text, page 3)

Table 3 is intended to be used together with the core location map for this cruise (page 117, this volume), the core descriptions, and the notes concerning piston and trigger core recovery aboard cruise 0775 (Cassidy *et al.*, 1977b). This approach will insure a knowledgeable evaluation of the data presented herein for the purpose of submitting sample requests.

FIGURE 4



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DIVISION OF POLAR PROGRAMS NATIONAL SCIENCE FOUNDATION

WASHINGTON, D.C. 20550

SPECIMEN AND CORE-SAMPLE DISTRIBUTION POLICY

The Division of Polar Programs supports collection and analysis of polar ice, sediment, and rock cores and of biological specimens. This statement establishes policy and procedures for distributing these materials to investigators for research use.

The State University of New York at Buffalo provides a storage facility and a curator for ice cores. The Florida State University provides a storage facility and a curator for sediment and rock cores. The Smithsonian Oceanographic Sorting Center provides a storage facility, a sorting service, and curators for biological specimens. The Division of Polar Programs funds operation of these facilities.

General provisions

The Foundation's objective is to assure (1) maximum availability of samples to qualified investigators, (2) analysis over a wide range of research disciplines without unnecessary duplication, and (3) prompt publication of results.

To obtain samples, an investigator first contacts the appropriate curator to determine that the needed material is available. The curator sends the investigator a form to be filled out or otherwise indicates the exact procedure to be followed. (For some specific types of samples see further instructions below.) The investigator sends the completed request for samples to the curator. The request must specify type and amount of samples required, purpose of research, and source of funding if funding is needed. The Division of Polar Programs or a designated advisory group authorizes distribution if warranted. Normally, a Division of Polar Programs grant for sample research automatically authorizes access to samples. Samples are not provided to investigators unless funding for the proposed research either is forthcoming or is not needed.

Investigator responsibilities

Investigators are responsible for:

1. Prompt publication of significant results, with acknowledgment of the National Science Foundation as the source of materials.

2. Submittal of annual letter reports to the curator citing publications resulting from the research and enclosing copies of the publications. If the investigator has not published in a particular year, he or she sends the curator a letter describing, very briefly, his progress over the last year.

3. Provision of a copy of the letter noted in item 2, and two copies of all published results, to the appropriate program manager in the Division of Polar Programs—whether or not the investigator has a grant from the Division.

4. Notification to the curator, with a copy to the program manager, of any proposed change from tasks stated in the original request.

5. Return to the curator of the remainders of samples or any residue in good condition, unless otherwise authorized by the curator.

Investigators may not distribute residue samples to other investigators without prior approval. Investigators receiving residue samples become subject to the reporting procedures outlined in this section. The objective of this provision is not to restrict research; on the contrary, the objective is to insure that the best possible use is made of the samples and that the curator is fully informed as to their use and disposition.

The curation facility may charge investigators to recover freight or mailing expenses involved in filling requests. The curator will estimate charges, if required, before processing the request.

Sediment cores

Sediment cores and bottom samples have been taken from numerous locations in the southern ocean using the research ship *Eltanin* (now *Islas Orcadas*) and other ships. Published core logs are available from the curator of the Florida State University facility. Before publication of logs, preliminary logs generally are available.

Piston core material is apportioned as follows:

- 1/4 for permanent reference, to be held in the core facility for future investigation as authorized by the Division of Polar Programs
- 3/4 for research use

Gravity cores, trigger cores, grab samples, dredge

samples, and other samples are apportioned as follows:

- 1/3 for permanent reference, as above
- 2/3 for research use

Ice cores

Glacier ice cores have been taken at several locations in Antarctica and Greenland. Deep cores (to bedrock) were taken at Byrd Station and Camp Century. Several 100-meter and 400-meter cores have been obtained from other ice sheet locations. The curator of the ice core storage facility at the State University of New York at Buffalo keeps a record of core locations. A data bank exists for each core, and annual reports on use of core are available.

Dry Valley Drilling Project cores

Preliminary core descriptions prepared by site geologists have been published in *DVDP Bulletins*, available from the Department of Geology, Northern Illinois University, DeKalb, Illinois 60115. The Dry Valley Drilling Project staff at Northern Illinois University keeps a record of sample requests, indicating investigator and subjects of study, that is available on request. Frozen and unfrozen core samples are kept at the Florida State University facility. Igneous rock core, including basement and massive basalts, is at Northern Illinois University, but may be moved to Florida State.

Distribution is made after joint approval by the project sponsors: the Antarctic Division, Department of Scientific and Industrial Research, Christchurch, New Zealand; the Japan National Institute for Polar Research, Tokyo; and the Division of Polar Programs. To request samples, researchers use a form available from a DVDP coordinator in Japan, New Zealand, or the United States or from the curator at Florida State University. To aid in choosing samples for study, new researchers may examine cores at the Florida State or Northern Illinois University facilities.

Ross Ice Shelf Project marine sediment cores

RISP cores are logged visually in the field, then shipped to the Florida State facility. The logs are available from the curator at Florida State. Researchers wishing to obtain samples should get a request form from the project coordinator or from the curator at Florida State, then apply to the Division of Polar Programs as described earlier. Normally, core will not be available until after

publication of the logs. However, investigators wishing to study ephemeral properties may request that the waiting period be waived. The curator keeps a record of sample requests, indicating investigators and subjects of study. The record is available on request.

Biological samples

To obtain samples/specimens from the Smithsonian Oceanographic Sorting Center, contact the Director, who will advise on availability of specimens and provide a request form. All requests are reviewed by an appropriate peer Advisory Committee established by SOSC. The DPP is advised of all requests and subsequent action. After study, specimens provided by SOSC must be handled as follows: holotypes and a representative series of nontype specimens should be deposited in the U.S. Museum of Natural History; remaining identified specimens may be deposited in other repositories on approval from SOSC curators.

Addresses and telephone numbers

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